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ABSTRACT

Critical issues facing higher education in New York State are examined in detail in this second volume of the 1984 Regents plan for postsecondary education. Included is substantive information relating to the Regents' proposals and recommendations. The critical issues are grouped under six headings: access, excellence, employment and economic development, diversity, effective use of resources, and enrollment projections. The 17 issues include: assuring campuses flexibility in the management of resources; encouraging the more efficient use faculty resources; reallocating, and if necessary, reducing resources while maintaining quality; exploring the effects of possible changes in state policy regarding tuition levels and financial aid; defining and ensuring a diverse system of higher education; supporting employment and economic development; increasing interinstitutional and intersector cooperation; responding to the need for equipment for instruction and research; maintaining the excellence of graduate and professional programs; perserving the vitality and quality of the liberal arts and sciences; and increasing access to education. Appendices include: "Minority Enrollment and Participation in Higher Education in New York State: An Issue Paper;" and "Net Cost of Student Attendance in New York: The Student Support Sources Model: An Issue Paper." (SW)

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Volume II

Critical Issues in Postsecondary Education in New York State

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October 1984

THE REGENTS STATEWIDE PLAN
FOR THE DEVELOPMENT OF POSTSECONDARY EDUCATION IN NEW YORK STATE

1984

Volume II

Critical Issues in Postsecondary Education in New York State

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CONTENTS

Page

Critical Issues in Postsecondary Education in New York State

Access

Issue 1. Increasing the Participation of Economically Disadvantaged, Minority, Female, and Handicapped Students 2

Issue 2. Overcoming Financial Barriers to Higher Education 11

Issue 3. Increasing Minority and Female Faculty and Professional Staff 20

Issue 4. Attracting Able Students to Teaching Careers 24

Issue 5. Assuring Opportunities for Returning Adults 31

Issue 6. Preparing Underprepared Applicants for College-Level Study 36

Excellence

Issue 7. Preserving the Vitality and Quality of the Liberal Arts and Sciences 40

Issue 8. Maintaining the Excellence of Graduate and Professional Programs 49

Issue 9. Responding to the Need for Equipment for Instruction and Research 55

Issue 10. Increasing Interinstitutional and Intersector Cooperation 57

Employment and Economic Development

Issue 11. Employment 64

Issue 12. Economic Development 72

Diversity

Issue 13. Defining and Ensuring a Diverse System of Higher Education 76

Effective Use of Resources

Issue 14. Exploring the Effects of Possible Changes in State Policy Regarding Tuition Levels and Financial Aid 82

Issue 15. Reallocating and, if Necessary, Reducing Resources while Maintaining Quality 100

Issue 16. Encouraging Efforts to Use Faculty Resources More Efficiently 109

Issue 17. Assuring Campuses Sufficient Flexibility in the Management of Their Resources 112

Regents Enrollment Projections 123

Issue Papers and Appendices

A. Minority Enrollment and Participation in Higher Education in New York State: An Issue Paper 159

B. Net Cost of Student Attendance in New York — the Student Support Sources Model: An Issue Paper 181

Page
C. Preparing Underprepared Applicants for College-level Study: An Issue Paper 203
D. Enrollment Projection Methods and Assumptions 217
E. Additional Finance and Facilities Data 223
F. Master Plan Amendments Approved by the Regents November 1, 1982, through October 31, 1984 237

FIGURES AND TABLES

Page
Figure A. New York State High School Graduates: Actual Spring 1974-1982 and Projected Spring 1983-2000 123
Figure B. NYS Enrollments in Postsecondary Institutions: Actual 1983 and Projected 1992........ 135
Table 1. Measures of Undergraduate Access, 1979-83.. 1
Table 2. Racial/Ethnic Composition, New York: 1st Grade in 1970-71, 9th Grade in 1978-79, 12th Grade in 1981-82, Full-Time, First-Time Students in Fall 1982 4
Table 3. State and Federal Student Aid Expenditures in New York State: Major Programs, 1979-80 — 1983-84.. 13
Table 4. Distribution of Student Financial Assistance by Type of Assistance, Statewide, 1980-81 and 1981-82 14
Table 5. Tuition Assistance Program Maximum and Minimum Undergraduate Awards and Income Ceilings (Dependent Students), 1979-80 — 1984-85 15
Table 6. Pell Grant Maximum Awards, 1979-80 — 1985-86.. 16
Table 7. Proportion of Racial/Ethnic Groups among Full-Time Instructional Faculty in New York State in 1981-82 20
Table 8. New York State Salaried, Full-Time Instructional Faculty, 1981-82 21
Table 9. Degrees Conferred in Selected Disciplines, New York State, 1980-81 24
Table 10. Proportion of Enrollment of Full-Time Seniors in Major Subject Areas, 1971 and 1981 ... 25
Table 11. Age Distribution by Level of Study, 1979, 1981, 1983 33
Table 12. Educational Attainment of Adults: New York State and the Nation, 1940-1982 34
Table 13. Associate Degrees Conferred in 1976-1977 and 1981-82 and Degree Credit Enrollment in Lower Division Fields 43
Table 14. Bachelor's Degrees Awarded and Total Upper-Division Enrollment for Selected HEGIS Areas, 1970-71, 1975-76, 1981-82 45
Table 15. Full-Time Upper-Division Undergraduate Enrollment in Liberal Arts Programs and Occupationally Oriented Programs by Two-Digit HEGIS Code, Fall 1971 and Fall 1982 .. 46
Table 16. Master's Degrees Conferred and Enrollment in Master's Degree Programs for Selected HEGIS Areas, 1970-71, 1975-76, 1981-82 50
Table 17. Doctoral Degrees Conferred and Enrollment in Doctoral Degree Programs for Selected HEGIS Areas, 1970-71, 1975-76, 1981-82 51
Table 18. Number of Research and Development Scientists per 1,000 Workers.................... 62
Table 19. Degrees in the Sciences, 1969-70 — 1981-82.. 63
Table 20. Occupations with Largest Job Growth, United States, 1982-1995....................... 65
Table 21. U.S. Employment in Occupations Which Often Require Associate Degree Education, Actual: 1979, 1982, Projected: 1995 66

Page

Table 22. Associate Degrees Conferred in Selected Two-Digit HEGIS Categories, NYS, 1979 and 1982 66

Table 23. U.S. Employment in Occupations Which Often Require Baccalaureate Degree Education, Actual: 1979, 1982, Projected: 1995 67

Table 24. Baccalaureate Degrees Conferred in Selected Two-Digit HEGIS Categories, NYS, 1979 and 1982 69

Table 25. Employment in Occupations Which Often Require Graduate Education, Actual: 1979, 1982, Projected: 1995 70

Table 26. Graduate Degrees Conferred in Selected Two-Digit HEGIS Categories, NYS, 1979 and 1982 70

Table 27. New York State: Number of Programs Offered Toward Associate Degree by Major Program Area, Regents Region, and Institutional Category 77

Table 28. New York State: Number of Programs Offered Toward a Bachelor's Degree by Major Program Area, Regents Region, and Institutional Category 78

Table 29. New York State: Number of Programs Offered Toward a Master's Degree by Major Program Area, Regents Region, and Institutional Category 79

Table 30. New York State: Number of Programs Offered Toward Doctoral Degrees by Major Program Area, Regents Region, and Institutional Category 80

Table 31. State Support for Postsecondary Education as a Percent of Total State Revenues 87

Table 32. State Funds to Postsecondary Education: Student Aid and Institutional Aid by Sector, 1978-79 to 1982-83 89

Table 33. State Funds to Postsecondary Education: Total Student and Institutional Aid by Sector, 1978-79 to 1982-83 91

Table 34. Share of Unrestricted Revenue from Each Revenue Source by Sector, Fiscal Year Ending 1979 and 1983 93

Table 35. Selected Revenue and Expenditure Data: SUNY State-Operated Campuses 95

Table 36. Selected Revenue and Expenditure Data: CUNY Senior Colleges 96

Table 37. Selected Revenue and Expenditure Data: Community Colleges 97

Table 38. Selected Revenue and Expenditure Data: Independent Sector 98

Table 39. Selected Revenue and Expenditure Data: Degree-Granting Proprietary Institutions 99

Table 40. Debt Service and Estimated M & O Costs 102

Table 41. Total Gross Square Feet by Condition, Fall 1982 104

Table 42. Change in Total Gross Facilities Condition, 1979 to 1982 105

Table 43. Nonresidential Facilities at Primary Campuses, 1979 and 1982 106

Table 44. Nonresidential Facilities per FTED at Primary Campuses: 1979 and 1982 107

Table 45. Change in Total Full-Time Equivalent Day Enrollment: 1979 and 1982 108

Table 46. Proportion of Salaried, Full-Time Faculty on 9- or 10-Month Contract with Tenure, 1981-82 109

Table 47. Ratios of Mean Full-Time Faculty Salaries, 9- or 10-Month Contract 110

Table 48. Student Support Sources Model Output 1981-82: SUNY State-Operated, Full-Time Undergraduate Dormitory Resident (Dependent) 117

Table 49. Student Support Sources Model Output 1981-82: SUNY Community Colleges, Full-Time Undergraduate Commuter (Dependent) 118

Table 50. Student Support Sources Model Output 1981-82: CUNY, Full-Time Undergraduate Commuter (Dependent) 119

Page

Table 51. Student Support Sources Model Output 1981-82: Independent Sector Group 1, Full-Time Undergraduate Dormitory Resident (Dependent) 120

Table 52. Student Support Sources Model Output 1981-82: Independent Sector Group 3, Full-Time Undergraduate Dormitory Resident (Dependent) 121

Table 53. Student Support Sources Model Output 1981-82: Proprietary, Full-Time Undergraduate Commuter (Dependent) 122

Table 54. New York State Degree-Credit Enrollment, 1975, 1977-1983 124

Table 55. New York State Rate of Participation by Age Group 128

Table 56. New York State Trends in Flow Rates for Full-Time Undergraduates Indexed as a Ratio of 1978 Levels 130

Table 57. New York State Projected Population Trends 132

Table 58. New York State Historical and Projected Enrollments, 1970-1983, 1985-2000 134

Table 59. New York State Projected Enrollment Changes, 1983 to 1992, by Region and Sector/Type of Institution 137

Table 60. New York State Regents Enrollment Projections for Full-time Undergraduates, 1985-1992 139

Table 61. New York State Regents Enrollment Projections for Part-Time Undergraduates, 1985-1992 140

Table 62. New York State Regents Enrollment Projections for Graduate Students, 1985-1992 141

Table 63. New York State Regents Enrollment Projections for First-Professional Students, 1985-1992 142

Table 64. New York State Sector- and Regents-Prepared Enrollment Projections, Full-Time Undergraduate 143

Table 65. New York State Sector- and Regents-Prepared Enrollment Projections, Part-Time Undergraduate 144

Table 66. New York State Sector- and Regents-Prepared Enrollment Projections, Full-Time Graduate 145

Table 67. New York State Sector- and Regents-Prepared Enrollment Projections, Part-Time Graduate 146

Table 68. New York State Sector- and Regents-Prepared Enrollment Projections, Full-Time and Part-Time First-Professional 147

Table 69. Comparison of Enrollment Projections Prepared by Each Sector with Regents Projections . 148

Table 70. Differences Between Actual Fall 1980 Enrollments and Projections of 1980 Enrollments in the Sector Master Plans of 1976 and in the 1976 Regents Statewide Plan 149

Table 71. New York State Sector Enrollment Shares for Total Enrollment, Level By Sector 1961, 1965, 1970, 1973-83 150

Table 72. New York State Total Enrollment, Level by Sector 1961, 1965, 1970, 1973-1983 151

Table 73. New York State Sector Enrollment Shares for Full-Time Enrollment, Level by Sector 1961, 1965, 1970, 1973-1983 152

Table 74. New York State Full-Time Enrollment, Level by Sector 1961, 1965, 1970, 1973-1983 153

Table 75. New York State Sector Enrollment Shares for Part-Time Enrollment, Level by Sector 1961, 1965, 1970, 1973-1983 154

Table 76. New York State Part-Time Enrollment, Level by Sector 1961, 1965, 1970, 1973-1983 155

Table 77. New York State Enrollment Shares: Full-Time, First-Time Enrollments by Sector and Type 1970, 1972, 1974-83 156

Table 78. New York State Full-Time, First-Time Enrollments by Sector and Type 1970, 1972, 1974-83 157

Appendix A

Page

Table 1. New York State Population Trends by Race/Ethnicity 165

Table 2. New York State Enrollment by Racial/Ethnic Category and Level of Study, Fall 1970, 1972, 1974, 1976, 1978, 1980, 1982 166

Table 3. High School Retention and College Participation of Race/Ethnic Groups in New York State, 1970 to 1982 168

Table 4. College Retention and Degree Attainment of Race/Ethnic Groups in New York State, 1978 to 1982 169

Table 5. Proportions of Enrollment of Race/Ethnic Groups Enrolled in Selected Discipline Categories in New York State, 1980-81 170

Table 6. Racial Ethnic Enrollment Distributions of Full-Time, First-Time Students by Regents Region and Institutional Level 1982-83 171

Table 7. New York State 1982 Full-Time, First-Time Enrollment in Two-Year Local Draw Institutions 172

Table 8. New York State 1982 Full-Time, First-Time Enrollment in Two-Year Local Draw Institutions as a Percent of 1981-82 High School Seniors 173

Table 9. New York State Full-Time, First-Time Enrollment as a Percent of High School Graduates of the Same Race/Ethnicity for Multiversities and State University Centers 175

Table 10. New York State Full-Time, First-Time Enrollment in Four-Year Institutions Other Than the State University Centers & Multiversities by Race/Ethnicity and Region of Student Draw Fall 1982 176

Table 11. New York State Full-Time, First-Time Enrollment in Four-Year Institutions Other Than the State University Centers & Multiversities by Race/Ethnicity and Sector Fall 1982 178

Table 12. New York State Distribution of High School Seniors and Full-Time, First-Time Enrollment in Public Four-Year Institutions Other Than the State University Centers 179

Table 13. New York State Projected Percent Change in High School Graduates from 1982-83 180

Appendix B

Table 1. 1981-82 Income Levels 183

Table 2. Alternative 1981-82 Income Levels 184

Table 3. 1981-82 Cost of Education 185

Table 4. Student Support Sources Model Output 1981-82: SUNY State-Operated, Full-Time Undergraduate Dormitory Resident (Dependent) 189

Table 5. Student Support Sources Model Output 1981-82: SUNY State-Operated, Full-Time Undergraduate Commuter (Dependent) 190

Table 6. Student Support Sources Model Output 1981-82. SUNY Community Colleges, Full-Time Undergraduate Commuter (Dependent) 191

Table 7. Student Support Sources Model Output 1981-82: CUNY Full-Time Undergraduate Commuter (Dependent) 192

Table 8. Student Support Sources Model Output 1981-82: Independent Sector Group 1, Full-Time Undergraduate Dormitory Resident (Dependent) 193

Table 9. Student Support Sources Model Output 1981-82: Independent Sector Group 2, Full-Time Undergraduate Dormitory Resident (Dependent) 194

Page

Table 10. Student Support Sources Model Output 1981-82: Independent Sector Group 3, Full-Time Undergraduate Dormitory Resident (Dependent) 195

Table 11. Student Support Sources Model Output 1981-82: Independent Sector Group 4, Full-Time Undergraduate Dormitory Resident (Dependent) 196

Table 12. Student Support Sources Model Output 1981-82: Independent Sector Group 1, Full-Time Undergraduate Commuter (Dependent) 197

Table 13. Student Support Sources Model Output 1981-82: Independent Sector Group 2, Full-Time Undergraduate Commuter (Dependent) 198

Table 14. Student Support Sources Model Output 1981-82: Independent Sector Group 3, Full-Time Undergraduate Commuter (Dependent) 199

Table 15. Student Support Sources Model Output 1981-82: Independent Sector Group 4, Full-Time Undergraduate Commuter (Dependent) 200

Table 16. Student Support Sources Model Output 1981-82: Proprietary, Full-Time Undergraduate Commuter (Dependent) 201

Appendix E

Table 1. State Support for Postsecondary Education 224

Table 2. State Funds to Postsecondary Education: Student Aid and Institutional Aid by Sector, 1978-79 to 1982-83 225

Table 3. Unrestricted Revenue from Each Revenue Source by Sector, Fiscal Year Ending 1979 and 1983 226

Table 4. Selected Revenue and Expenditure Data: SUNY State-Operated Campuses 227

Table 5. Selected Revenue and Expenditure Data: CUNY Senior Colleges 228

Table 6. Selected Revenue and Expenditure Data: Community Colleges 229

Table 7. Selected Revenue and Expenditure Data: CUNY Community Colleges 230

Table 8. Selected Revenue and Expenditure Data: SUNY Community Colleges 231

Table 9. Selected Revenue and Expenditure Data: Independent Sector 232

Table 10. Selected Revenue and Expenditure Data: Degree-Granting Proprietary Institutions 233

Table 11. Nonresidential Facilities on Primary Campuses: 1979 and 1982 234

Table 12. Nonresidential Facilities per FTED at Primary Campuses: 1979 and 1982 235

Table 13. Change in FTES and FTEDS Enrollment: 1979 to 1982 236

THE REGENTS STATEWIDE PLAN FOR THE DEVELOPMENT OF POSTSECONDARY EDUCATION IN NEW YORK STATE, 1984

Volume II

Critical Issues in Postsecondary Education in New York State

In Volume I of this Plan, the Regents set forth their recommendations on actions which should be taken to address the most critical issues confronting higher education in New York State. In this volume, those issues are examined in some detail and the substantive base for the Regents actions and recommendations is laid.

The material addresses the five Regents goals of Access, Excellence, Employment and Economic Development, Diversity, and Effective Use of Resources; it includes as well the enrollment projections for New York State through 1992. Volume III in this Plan contains the master plans developed by the public, independent, and proprietary sectors, documents which describe the actions to be taken by these sectors to advance both the Regents goals and the particular missions of their institutions.

In their 1980 Statewide Plan, the Regents described the general mission of postsecondary education as follows:

1. **Teaching.** The primary mission of the postsecondary system is teaching, endowing individuals with a sense of themselves and the wider world, a capacity to see themselves as others see them and to see the world with a fresh and critical eye, an interest in learning, a commitment to fact and truth, the aesthetic capacity to create and to enjoy, the intellectual capacity to analyze and solve a problem, the moral capacity to judge, and the skills and knowledge required to pursue their chosen careers.

2. **The Extension and Preservation of Knowledge.** New York's colleges and universities should be at the forefront of scientific and humanistic research and creativity. The postsecondary institutions, with their rich faculty resources, their rich library collections, and their cultural and scientific resources, should be masters of the best techniques to create, store, retrieve, and disseminate knowledge.

3. **Service.** New York colleges and universities must serve our communities, State, and Nation. They must train and retrain workers and professionals to keep them abreast of changing technologies in the work place and the advance of knowledge in professional fields. Higher education must apply its research capacities to the social and technological problems of our communities and our society and to the economic redevelopment of New York State and the Nation.

It is within this comprehensive mission of instruction, research, and service that the Regents have articulated the goals and issues which are critical to the continued development of postsecondary education in New York State.

Access

New York State has had a long-standing commitment to the provision of equal opportunity to participate in postsecondary education to all persons who wish to do so and can benefit from it. That commitment underlies the goal of Access,

> to provide equal opportunity for postsecondary education for all New Yorkers without discrimination on any invidious grounds (including age, race, sex, creed, national origin, geographic location, economic status, or handicapping condition), including the provision of equal opportunity for all who are admitted to postsecondary institutions to complete the courses and programs in which they are enrolled.

Key steps taken to fulfill that commitment have included the establishment of full opportunity community colleges, open admission at City University, the Tuition Assistance Program, and the development of State-supported opportunity programs for economically and educationally disadvantaged students at public and independent colleges.

In 1961, the "baby boom" generation was ready to enter college. In that year there were 403,199 full- and part-time undergraduate and graduate students in New York. In 1983, the total was 999,175, an all-time high, and an increase of 147.8 percent over 1961. Graduate enrollment increased less than undergraduate (133.1 percent to 213.8 percent). While full-time undergraduate enrollment increased by 178.9 percent, the number of part-time undergraduates grew by 335.6 percent between 1961 and 1983, from 58,834 to 256,308.

The 60's and 70's saw substantial increases in participation in higher education by women and members of minority groups. While the total number of male undergraduate and graduate students increased by 84.9 percent between 1961 and 1981, the number of women increased by 243.7 percent.

In 1970, there were 139,809 full-time, first-time freshmen at New York colleges and universities. By 1981, that number had grown by 18 percent, to 164,956. Since 1981, the number of full-time, first-time freshmen has declined, at least in part because of changing demographic conditions. In the fall of 1983, it stood at 158,325.

Two broad measures of the extent to which New York's colleges and universities are providing access to undergraduate study for New Yorkers are (1) the "New York State Recent High School Graduate College Entrance Index," and (2) the Ratio of Part-Time Students between the Ages of 20 and 44 to the State's Total Population in that Age Group. Both measures were included in the Regents 1982 Progress Report on the 1980 Plan among indices of access to postsecondary education. The first provides an approximate measure of gross access for recent high school graduates; it is the ratio of the number of New Yorkers below the age of 20 enrolled as full-time first-time students in the fall of a year to the number of high school graduates in June of that year. The second is an approximate measure of adult participation in undergraduate education.

For the period 1979-1983, these measures are displayed in Table 1, below.

Table 1
MEASURES OF UNDERGRADUATE ACCESS
1979-83

	New York State Recent High School Graduate College Entrance Index	Prop. of Total Population 20-44 represented by Part-Time Undergraduates, 20-44
1979-80	47.5%	2.90%
1981-82	51.3%	2.94%
1983-84	52.3%	3.01%

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 1 shows that access improved for recent New York high school graduates over the four years since 1979-80, as shown by the increase of 4.8 percentage points in the first index. Participation by persons aged 20-44 as part-time undergraduates was virtually unchanged; this indicates that access to part-time undergraduate study for adults did not improve over the period.

During the period of this Plan, promotion of the goal of Access will be one of the Regents paramount concerns. To assure that the progress already made is enhanced, rather than eroded, six major issues must be addressed by both concrete actions and continued research. These issues are:

1. Increasing the number of economically disadvantaged and minority students and of women who participate in and complete undergraduate and graduate programs, particularly in technical fields such as mathematics, science, engineering, computer science, and professional programs, and increasing the number of handicapped persons who participate in and complete degree programs.
2. Ensuring that full-time or part-time students who are unable to meet the costs of whatever higher education program suits their qualifications and interests can overcome financial barriers to access.
3. Increasing the representation of minorities and women among college and university faculty and professional staff.
4. Attracting able students to teaching careers at all levels, particularly in disciplines where shortages are projected, despite discouraging short-term prospects for employment and income.
5. Assuring opportunities for adults to return to colleges or universities for study related to civic responsibility, personal growth, or employment.
6. Preparing underprepared applicants for college-level study.

These issues are interrelated. The first two, however, are particularly strongly related to one another. The existence of financial barriers to postsecondary education is closely linked to the level of participation by members of minority groups. Nationally, almost 36 percent of black families and over 28 percent of Hispanic families had incomes below the poverty level in 1983; for whites, the proportion was 12 percent.

In New York in 1959, 10 percent of families headed by persons aged 35 to 44 — typically parents of college-age children — had incomes below [illegible] threshold of poverty ($10,000 in 1981 dollars), according to the Bureau of the Census. In 1969, that proportion had risen to 12.5 percent. In 1979, it stood at 17.6 percent. An examination of the overall distribution of family income in New York State over that period shows, for families headed by persons between the ages of 20 and 44, a shift to both the high and low ends of the income scale, with a smaller proportion of such families in the middle-income category.

Over the same period, the expansion of student financial assistance from State and Federal sources aided increasing numbers of low-income students to attend college. Nationwide, total student financial assistance, from Federal, state, and institutional sources, rose from $0.5 billion in 1963-64 to $4.5 billion in 1970-71, to more than $18 billion in 1981-82. The total has not significantly grown since then. This is discussed in more detail under Issue 2, below.

Issue 1. Increasing the number of economically disadvantaged and minority students and of women who participate in and complete undergraduate and graduate programs, particularly in technical fields such as mathematics, science, engineering, computer science, and professional programs, and increasing the number of handicapped persons who participate in and complete degree programs.

Between 1971 and 1982, total enrollments at New York's public, independent, and proprietary degree-granting institutions grew by 17.4 percent, from 841,753 to 988,292. Over that same period, black enrollment grew by 37.6 percent, from 76,063 to 104,653; enrollment of native Americans, by 87.7 percent, from 2,504 to 4,699; of Hispanics, by 99.8 percent, from 28,288 to 56,506; and of Asians, by 137.1 percent, from 11,179 to 26,504. Total minority enrollment grew from 118,034 to 191,912. In 1972, minority group members constituted 14 percent of total enrollment; in 1982, they constituted 19.5 percent. Black, Hispanic and native American students constituted 12.7 percent of total enrollment in 1972; they constituted 16.5 percent in 1982. (This is reviewed in detail in Appendix A.)

In comparison with the 17.4 percent increase in total enrollments between 1972 and 1982, the 54.8 percent increase in the number of black, Hispanic, and native American students over the same period seems impressive; their increase was triple the growth in total enrollment. However, this growth in black, Hispanic, and native American enrollment in total does not mean that equal participation in higher education has been achieved for all.

Today, members of minority groups enter college in proportion to their representation among high school graduates; however, there is a marked attrition of black, Hispanic, and native American pupils between the ninth and 12th grades. Blacks constituted some 12.4 percent of all full-time, first-time freshmen in New York in the fall of 1982 and they had made up 12.2 percent of the 12th grade in 1981-82; however, they were 18.5 percent of the ninth grade four years earlier, in 1978-79. Similarly, Hispanic students made up 7.2 percent of all full-time, first-time freshmen in the fall of 1982 and 6.4 percent of all 12th grade pupils in 1981-82, but they constituted 11.1 percent of all ninth grade pupils in 1978-79. Table 2, below, shows the racial/ethnic composition of the first grade in New York in 1970- 71, the ninth grade in 1978-79, the 12th grade in 1981-82, and full-time, first-time students in New York in the fall of 1982.

Between 1972 and 1981, progression ratios from the ninth to the 12th grade dropped from 85 percent to 81 percent for whites, from 60 to 47 percent for blacks, and from 53 to 41 percent for Hispanics, although declines were less between 1979 and 1981 than between 1972 and 1979. These ratios were biased by the net emigration of whites from the State and the net immigration of blacks and Hispanics during the 70's. Taking these events into account worsens the estimated decline for Hispanics and (to a lesser extent) blacks, and lessens it for whites. A particular problem is that black and Hispanic males appear to complete high school and enter college at much lower rates than do females. An additional problem is the disproportionately low levels at which members of minority groups pursue programs based in mathematics and the sciences. For example, although blacks and Hispanics earned 10.9 percent of all bachelor's degrees conferred in New York in 1980-81, they received only 7.1 percent of those in mathematics, 6.4 percent in engineering, and six percent in the physical sciences. This suggests a need for colleges to assist elementary and secondary schools to strengthen resources in these disciplines and to provide guidance and encouragement for more pupils to pursue mathematics and science. Improved in-service training, greater articulation in curricula, and better counseling/support structures are promising areas for action.

In June 1982, a national Policy Conference on Postsecondary Programs for the Disadvantaged met to consider the present status of opportunities in postsecondary education, and the best means of providing opportunities in the 1980's and beyond. It was supported by a grant from the Fund for the Improvement of Postsecondary Education to the Regents, with the cooperation of the Johnson Foundation. The Conference identified graduate and professional education for members of minority groups as "a very high priority because of past neglect and severe underrepresentation." It called for strengthened efforts by states and the Federal government "to insure that more blacks, Hispanics, and Native Americans complete advanced degrees."

The problem of underrepresentation of minorities in graduate and professional education has its roots much further down in the educational system. Participation rates of minorities decline from the high school to the undergraduate, graduate, and first-professional levels. Black, Hispanic, and native American students constituted 18.5 percent of all undergraduates in 1982, but only 8.2 percent of all graduate students, and only 6.3 percent of all first-professional degree students (e.g., M.D., D.D.S., J.D.). While black and Hispanic baccalaureate recipients enter and complete graduate programs at only moderately lower rates than whites, high dropout rates earlier in the educational sequence result in only about four to five percent of the ninth grade blacks and Hispanics receiving advanced degrees, compared to about 13 percent of the ninth grade whites. Low graduate participation levels are unfortunate since degree programs in professional-technical fields such as law, medicine, mathematics, the hard sciences, engineering, and computer science offer significant opportunities for employment and economic growth for both individuals and society at large.

The Regents are concerned that, in New York State, only five percent of all the first-professional degrees awarded in 1980-81 went to blacks or Hispanics. In the fall of 1980, 2.4 percent of dental school enrollment in the State was black or Hispanic. The figure was 6.7 percent for medical schools, six percent for law schools, 1.9 percent for the veterinary school, and one to two percent for the chiropractic school. At least part of the differences at the graduate levels can be associated with program differences observed at the undergraduate level. Blacks and Hispanics have been much less likely to receive undergraduate degrees in mathematics, the biological sciences, the physical sciences, or engineering than have whites. In 1980, 5.1 percent of the undergraduate degrees awarded to blacks were in these fields, as were 7.6 percent for Hispanics and ten percent for whites (compared to 2.5 percent, 3.2 percent, and nine percent, respectively, in 1976).

The Regents reiterate the statement they made in the 1980 Statewide Plan, "In the long run, the objective is that minority group members earn approximately the same proportion of degrees at all levels as their proportion in the population."

Through the Action Plan to Improve Elementary and Secondary Education Results in New York, the Regents have sought to address the problems of elementary and secondary education that have produced a

Table 2

RACIAL/ETHNIC COMPOSITION, NEW YORK
1st Grade in 1970-71, 9th Grade in 1978-79, 12th Grade in 1981-82, Full-Time, First-Time Students in Fall 1982

	Black	Hispanic	Native American	All Other Minorities	White	Total
1st Grade in 1970-71	54,205 (15.4%)	36,238 (10.3%)	627 (0.2%)	2,315 (0.6%)	259,033 (73.5%)	352,418 (100.0%)
9th Grade in 1978-79	61,637 (18.5%)	36,961 (11.1%)	690 (0.2%)	3,905 (1.2%)	230,154 (69.0%)	333,347 (100.0%)
12th Grade in 1981-82	28,704 (12.2%)	15,046 (6.4%)	412 (0.2%)	4,194 (1.8%)	186,99 (79.4%)	235,355 (100.0%)
Full-time, First-time Students, Fall 1982	19,590 (12.4%)	11,453 (7.2%)	825 (0.5%)	4,394 (2.8%)	122,363 (77.1%)	158,625 (100.0%)

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

tragically inadequate pool of qualified applicants for graduate and first-professional degree study. As that situation is remedied, however, there will be an increasing need for special efforts at the graduate level. The problems these efforts must address are cited below.

The graduate participation of women also remains a concern. In the latter half of the 1970's, the proportion of first-professional and doctoral degrees awarded to women increased. However, in 1980-81 women received just one-third of these degrees despite the fact that they outnumber men in baccalaureate programs. At the master's level, women received 54.1 percent of all the degrees awarded, but the degrees earned by women still are heavily concentrated in traditional areas such as education (40 percent of all the master's degrees received by women). Women are less likely to receive degrees in professional and technical fields than are men.

In its master plan, the State University of New York states that as a publicly supported system, it has "a special obligation to provide educational services for all New York citizens who seek and can benefit from postsecondary opportunity." State University reports that "In recent years new policies and programs have underscored the University's commitment in this area. All of SUNY's community colleges, for example, now have approved Full Opportunity Programs, guaranteeing admission to a course of study for anyone who graduates from a high school in the community college's sponsorship area." SUNY's Educational Opportunity Program offers tutoring, counseling, and direct financial aid for economically and educationally disadvantaged students, and SUNY operates eight Educational Opportunity Centers and a community college outreach program in or near urban areas, which provide basic and vocational education to these students. It continues to strive to increase the numbers of minority populations enrolled in its programs so that members of minority groups have an opportunity to share equitably in higher education. In its master plan, State University of New York states the following recommendation concerning the access issue, which the Regents have approved: "The University will continue to develop effective means of supporting minority enrollment on its campuses, particularly in academic programs where minorities are underrepresented" (#3).

State University initiatives seek to increase opportunities in engineering and the engineering technologies for minority and female students who are still underrepresented in these fields. The University is also stepping up recruitment of minority students and faculty in its health science programs. In addition, SUNY will take all possible and appropriate steps to assist women, minorities, and the handicapped through targeted financial support, child care and other special support services, improved physical access to facilities, and course work to remedy academic deficiencies for those otherwise qualified for postsecondary programs. The University will continue to modify its practices and academic structure as necessary to increase educational and employment opportunities for individuals from underrepresented groups.

The master plan of The City University of New York states that "The philosophy of The City University has long been rooted in the conviction that every man and woman who wants a quality education should get one, regardless of social or economic condition." The University cites an historic commitment to broadening educational opportunity for the economically and educationally disadvantaged. Important manifestations of this commitment are SEEK and College Discovery, the special opportunity programs for disadvantaged students entering the senior and community colleges. The University states that the composition of its student body reflects the commitment: 55 percent of students are black, Hispanic, Asian, or are in other minority groups; 30 percent come from homes in which English is not the first language; two-thirds come from families in which neither parent attended college; and one-third of students attending community colleges earn less than $8,000 per year. Also, most students attending CUNY institutions are women — 63 percent of community college students; 56 percent of senior college undergraduates; and 67 percent of graduate students.

In its master plan CUNY cites two major aims which concern student access. One is: "to provide a comprehensive student financial aid system which includes part-time students and emancipated students." The second aim is: "to develop viable student support systems which respond to the unique character of the University's student body." Believing that student support programs are underfunded, the University is seeking additional resources for counseling, academic advisement, orientation, child care, and remediation programs. The City University states that as an open-access institution, it "must assure that the promise of a college education is backed by services for students who are academically, economically, or socially disadvantaged."

The consolidated master plan for the proprietary sector reports that in recent years a growing number of minority and disadvantaged students have enrolled in proprietary institutions, many of which are located in or near urban centers. As a result, the plan states, proprietary institutions have developed counseling, vocational guidance, and remediation programs to help these students. The proprietary institutions expect to continue active recruitment at urban high schools which have sizable populations of economically and educationally disadvantaged students. Although proprietary institutions have traditionally attracted large proportions of female students, the master plan reports that a number of proprietary institutions have business and technical programs that attract large proportions of both men and women, and a number serve large proportions of adult students.

The Commission on Independent Colleges and Universities notes that "There is significant underrepresentation of minorities in the licensed professions in New York State." It therefore recommends that the Regents "recommend additional programs for minority access to the natural science, engineering and graduate professions with adequate funding based on proven successful programs of this type, spanning all three levels of education" (#14).

The State Education Department reviewed the master plans of a 14-institution sample of the 138 independent colleges and universities in New York. The sample included two multiversities, two universities, three college complexes, two colleges, one specialized college, two engineering/technical colleges, one health science center, and one two-year college, reflecting both the distribution of independent institutions by type and each type's share of the independent sector's fall 1983 FTE enrollment. Each region of the State was represented.

Thirteen independent institutions reported current special efforts to recruit women and members of minority groups, especially in mathematics, the sciences, technical fields, and the professions. New York University has special recruitment efforts for business, the sciences, community health, and biomedical education. Syracuse University said that it sought to extend to computer science, mathematics, and the sciences the successful efforts used by its College of Engineering. Canisius College, Hofstra University, Pace University, Rochester Institute of Technology, and Sarah Lawrence College all have special institutional student aid programs to assist minority students. Clarkson University's efforts concentrate on native Americans, the predominant minority population in the northern region. Rochester Institute of Technology has initiated faculty and student exchanges with public black colleges in other states and with Howard University; it also has a three-year "Women in Engineering Technology Project" to recruit and retain women in engineering technology by providing mentoring, support groups, and faculty development in sex-equity strategies. Canisius has a special "re-entry" program for adult women.

At the graduate level, Clarkson, Hofstra, and St. John's subscribe to the Graduate Record Examination Board's Minority Graduate Student Locator Service. Marist College plans to make use of it also. St. John's and NYU are engaged with Citibank in a cooperative effort to encourage nonbusiness major minority undergraduates to pursue graduate study in business. St. John's and Hofstra reported that their law schools had special minority recruitment programs. Albany Medical College has a special eight-year joint program with Rensselaer Polytechnic Institute that identifies minority high school students, provides special summer programs after the 11th and 12th grades, and after each year at RPI. Students complete a biology major at RPI and enter the medical school. In 1983, six students entered RPI under this program; Albany Medical College believes the number could be increased to ten each year, with funding. Albany Medical College also accepts five students each year from the biomedical science program at The Sophie Davis School of Biomedical Education at City College.

There are many indications of the complexity and deep roots of problems leading to low college participation. These problems are essentially the same problems identified by the Regents, in the February 1984 action paper on "Increasing Minority Access to the Licensed Professions," as major barriers to access. Programs aimed at them need to be multifaceted, with contributions made at many levels of society and the educational system. They must attend to problems of limited awareness of career options; inadequate counseling at all stages of education; lack of aspiration resulting from these problems, language difficulties, and self-image problems; lack of appropriate minority role models; low expectations in mathematics, the sciences, and English; insufficient opportunities for special help, tutoring, and remediation; inflexible or insensitive admissions procedures; inadequate planning and provision of special help to promote retention; lack of adequate funding; and lack of institutional commitment to affirmative action. These are particularly serious problems because of large demographic changes now under way. Minority populations grew rapidly throughout the State during the 1970's. During the 1980's and early 1990's minority high school graduates are expected to experience little or no decline in numbers, while the numbers of white high school graduates are expected to decline. As a result, the minority share of New York's high school graduates is expected to grow from one-fifth to nearly one- third by the middle 1990's. These events will have significant economic and social consequences unless programs can be developed to help equalize access and opportunity for all to both jobs and education.

Historically, minority participation in educational programs that lead to professional licensure has always been relatively low. In the early 1970's there was some increase in the enrollment of minorities in certain fields, but more recently New York has witnessed a decline in the number of minorities enrolling in and graduating from programs leading to professional licensure.

The severe underrepresentation of minorities in the licensed professions has been a subject of major concern for the Regents. Particular concern for the licensed professions reflects the fact that, by Education Law, practice of a profession is limited to those who meet stated requirements. The Regents are regulators of these areas and caretakers of the public trust. Proper administration of the professions requires that equity and balance be major considerations in professional education and licensing.

To address the problems enumerated above, in the action paper on "Increasing Minority Access to the Licensed Professions" the Regents proposed 20 strategies for action. When implemented, they will mark a significant advancement toward remedying this situation in New York State. Some of them require statutory authorization, or appropriations, or both, and bills to implement those strategies have been included in the Regents legislative program. Others require coordinated action by all levels of education, including the higher education community, on both a short-term and a long-term basis. All the strategies relating to higher education are restated below; many apply not just to the professions, but to all fields of study:

- The professions, under the leadership of the State Education Department and State Boards, must reach out to minority students at all levels of education, providing information, encouragement, and positive role models early in the educational pipeline and instructional and financial assistance at subsequent stages. Minority access committees must be established and activated in all the State Boards to provide a constant resource to the various parties involved in increasing minority access to the professions.

- The State, through legislation, should establish and fund regional consortia which include representation from all levels of education, as well as the professions and other interested groups. The consortia should be responsible for implementing programs that begin at the earliest point in the educational process and extend through to professional licensure. Programs should be designed to increase student, parent, and school awareness of professional opportunities and educational requirements for professional study. Programs should also be pursued which retain minority students in educational activities that are prerequisite for professional study and licensure. Such programs should be based on a contractual agreement between the Education Department and regional groups and provide for academic enrichment courses (math, science, and English); tutoring; counseling; visits to professional work sites; summer and academic year internships and preceptorships; long-term public information campaigns; and other appropriate projects. Each regional consortium would be responsible for submitting annual plans to the Department. The plans would include goals, objectives, timetables, and activities aimed at increasing minority access and improving student retention at all levels of education.

- The Education Department will collaborate with other State agencies to develop training projects designed to increase the skill levels of minority staff currently employed as nonprofessionals and paraprofessionals who, with additional education and training, could qualify for professional licensure. These projects will be designed with the needs of minority adults in mind and will provide flexible training activities.

- An external advisory committee to the Commissioner of Education and the Regents will be established with primary responsibility for developing and implementing strategies to increase the numbers of licensed minority professionals in New York State to a more proportional level. The advisory committee will include representatives from State government, community-based organizations, professional boards and associations, parent groups, educational institutions, private industry, philanthropic foundations, and other groups interested in improving representation of minorities in professional training and practice.

- With the assistance of the Education Department, State Boards for the professions, professional associations and societies, and higher education institutions should collaborate with local school district personnel, beginning in the earliest years of schooling to prepare and encourage minority students to enroll in programs that will make possible their entry into college preparatory curricula prerequisite for professional study. As necessary, local school districts should provide minority students with academic enrichment courses (e.g., pre-algebra) that foster successful completion of the Regents sequence in English, mathematics, and science, with additional mathematics and/or science wherever possible.

- The Education Department, collaborating with the State Boards for the professions, the respective associations and societies, and institutions providing preprofessional and professional programs of study, will develop materials that describe the professions, prerequisite course requirements for college entry, and requirements for licensure. In addition, self-instructional materials should be developed for elementary/secondary school counselors and teachers delineating techniques for promoting awareness of professional careers (e.g., visits to schools by minority professionals and visits to professional work sites by students). The material should be distributed on a statewide basis to be used in promoting career awareness activities. Work/study programs should be established to expose interested high school students to the practice of the professions.

- The Education Department will request that all colleges and universities submit with their progress reports for 1986 a plan of action program aimed at redressing the underrepresentation of minorities in educational programs. In the interim, for 1984-85 and 1985-86, the Department will request that all colleges and universities submit, in a special format, plans for increasing minority access to and retention in preprofessional and professional programs of study.

- The State's public and independent higher education sectors, in conjunction with their opportunity programs (College Discovery, SEEK, EOP, HEOP), should make the development of programs to increase minority access to the licensed professions a top priority. The three sectors should implement strategies aimed at enrolling and graduating a progressively greater proportion of minorities in preprofessional and professional education programs.

- The State should increase funding levels for the opportunity programs. The increased funding should be targeted specifically for expanding services to those students who are oriented toward programs leading to professional licensure and practice. These expanded opportunity programs should be based on a contractual agreement between the Education Department and undergraduate institutions and provide for increased awards and specialized academic support services specifically designed to increase student retention and performance in programs leading to professional licensure.

- When two- and four-year educational institutions offering preprofessional and professional programs are located within geographic proximity, specific arrangements should be made to facilitate the transfer of minority students interested in pursuing professional careers requiring baccalaureate or graduate degrees.

- Two- and four-year educational institutions should develop and implement supportive service systems (i.e., counseling, financial aid, tutoring, summer enrichment and internship programs, and academic year reinforcement activities) designed to prepare and retain minority students enrolled in preprofessional and professional programs of study.

- The Education Department will enlist the experience and assistance of professional schools with records of success in serving minority students, in order to further statewide action to increase minority enrollment and retention.

- Where four-year undergraduate institutions offering preprofessional programs and graduate institutions providing professional programs of study are located in geographic proximity, "feeder" programs should be designed to facilitate admission of minority students to graduate programs leading to professional licensure.

- Graduate and professional schools should develop and implement supportive service systems (i.e., counselling, financial aid, tutoring, summer programs, and academic year reinforcement activities), that will enable minority students to successfully complete the prerequisites for professional licensure.

- The State should establish and fund a statewide graduate and professional opportunities program designed to increase the admission and graduation of minority students in educational programs leading to professional licensure. This program should be based on a contractual agreement between the Education Department and graduate and professional schools and provide for increased financial aid (fellowships, grants, assistantships) and academic support services (summer enrichment programs, academic year tutoring, and counseling).

- Higher education institutions involved in the training of elementary and secondary school teachers and counselors should develop ways to increase prospective teachers' sensitivity to the problems in education that impede minority students' entry to programs leading to careers in the professions. Such components should be introduced and encouraged as a regular part of teacher and counselor training programs.

- Graduate and professional schools should develop and implement affirmative action activities and programs to recruit, hire, and promote minority faculty and administrators. The affirmative action program should also provide on-going activities to orient and sensitize administrators and faculty to the special needs of minority students.

Assuring equality of access to postsecondary education requires efforts to provide adequate preparation in elementary and secondary schools and remediation by postsecondary institutions for persons whose preparation was not adequate. These alone are not sufficient, however, because many of the barriers to equal participation, not just in postsecondary education but in American society, lie wholly or partially outside the educational system. Since service is one of the three essential parts of the mission of American higher education, colleges and universities in the State should provide services that will help eliminate those barriers. Many of the barriers are most acute in our urban areas; our urban colleges and universities must make special efforts in teaching, research, and service, to alleviate them. They must (1) work with urban schools to enhance preparation of the young for college-level study, (2) provide the remedial services needed by underprepared applicants, (3) provide the educational programs needed to enhance the well-being of the peoples of their urban areas, (4) conduct research into urban issues, and (5) provide services in support of urban problems.

To assure access to high demand programs by women and members of minority groups:

Actions

The Regents set forth the following actions to be undertaken by colleges and universities during the period of this Plan:

1-a. Establishment by colleges and universities of collaborative programs with elementary and secondary schools to increase the number of minority and women students who will be qualified to major in the sciences and technologies.

1-b. Special efforts by two- and four-year higher education institutions to enroll and assist minority students in educational programs that qualify them for licensure in the professions.

During the period of this Plan, the Regents and the Department will:

1-e. Collaborate with other State agencies to develop training projects designed to increase the skill levels of minority staff currently employed as nonprofessionals and paraprofessionals who, with additional education and training, could qualify for professional licensure.

1-f. Collect annually from institutions information on minority enrollment and completion of degree programs, and on actions taken to increase access to high demand programs.

RECOMMENDATIONS

1-g. To enhance services to educationally disadvantaged children, the Regents recommend that the Governor propose to the Legislature the establishment of a program to provide aid to college students who perform tutoring and other educational services in schools with high attrition rates. Classroom teachers should directly supervise this program and should work with college faculty in establishing criteria for the selection of student tutors and standards for the operation of the program.

1-h. The Regents recommend that the Governor join with them and the Legislature to establish and fund a statewide professional entry program for the purpose of increasing the proportion of underrepresented minorities in educational programs leading to professional licensure.

1-i. The Regents recommend that the Governor propose to the Legislature that formal mechanisms be established, both at the regional and State levels, to assure that local education agencies, public libraries, professional groups, institutions of higher education, and the Education Department collaborate on activities designed to increase significantly, on both a short-term and a long-term basis, the proportion of minorities in the licensed professions.

1-j. Many of the barriers to participation in postsecondary education for low-income persons, members of minority groups, women, and the handicapped are outside the realm of the schools. In recognition that those barriers are most acute in the State's cities, the Regents recommend that the Governor propose to the Legislature the creation of Centers on Urban Issues. These centers would bring together the combined resources and talents of our postsecondary and other educational institutions, business and industry, joint apprenticeship council, and city and county governments to address and propose approaches to the educational and noneducational problems which limit full participation in society and access to postsecondary education.

1-k. In 1980, the Regents encouraged the Congress to enact the Urban Grant University program to assist urban universities to meet urban needs, as part of the Federal Higher Education Act; the Regents recommend that the Governor join them in working for reauthorization and funding for that program.

The past decade has been a period of substantial progress in the expansion of services for disabled persons. Passage of the Education of All Handicapped Children Act in 1975 has dramtically increased the quality and scope of educational services for disabled youth in elementary and secondary schools. Because of these efforts, many more disabled youth will be able to benefit from postsecondary education opportunities in New York State, and it is incumbent upon postsecondary education institutions to promote full access for disabled persons.

In the fall of 1983, an estimated one percent (9,959) of the students at New York's public, independent, and proprietary degree-granting institutions suffered from disabilities, according to data reported by the institutions. Some 46 percent were attending State University campuses and community colleges, constituting 1.2 percent of all State University students; about 36 percent were at independent institutions (0.9 percent of all independent sector students); almost 17 percent were at City University (0.9 percent of City University students); and about 0.4 percent were at proprietary degree-granting institutions (0.1 percent of their students).

Federal law requires that public facilities be designed to allow access by the physically handicapped. State University reports that at present only limited funds are available for these necessary capital modifications. SUNY states that it is committed to compliance when funds are made available and states the following recommendation : "The University will seek support for appropriate modification of existing structures and will design and construct future facilities to accommodate the needs of the physically handicapped" (#18).

The proprietary sector master plan reports that proprietary institutions will continue to work toward the goal of access for handicapped people. It states that the institutions will allocate available funds as feasible to the removal of architectural barriers.

For physically disabled persons, universities and colleges should insure accessibility on campus and in buildings, as well as full accessibility to programs and courses of study. Certain supportive services are necessary to allow disabled individuals access to programs of study. Deaf individuals may need interpreters to assist them in obtaining information. Other individuals may require readers, notetakers, attendants, or possibly assistance in transportation in order to participate in degree programs. Remedial opportunities should be made available, where needed and appropriate.

Actions

The Regents set forth the following actions to be undertaken by colleges and universities during the period of this Plan:

1-c. Provision of full equality of opportunity to persons with disabilities. Institutions should strive to eliminate barriers that preclude participation by disabled persons, and should promote efforts for full access. Special efforts should be made to ensure the availability of those supportive services which may be required to enable disabled persons access to postsecondary education.

1-d. Cooperative efforts by colleges and universities to provide enhanced support services — especially job placement — for disabled students. If such cooperative efforts show success, the Regents believe that a State program to fund promising cooperative endeavors in this area should be considered.

Many universities and colleges have established special offices to provide needed support and assistance to disabled students on campus. These offices often play a key role in providing information on financial aid and benefits that will assist the individual in obtaining financial resources to complete programs of study. For a large number of disabled persons, additional costs are necessitated as a result of disability which adds a further burden to the costs of obtaining a postsecondary education. Offices for disabled students as well as financial aid offices should work closely with disabled students to enable them to overcome financial barriers to higher education programs. Disabled students' services offices are also instrumental in obtaining and coordinating needed support services on campus.

An important resource available to many disabled postecondary students is the Department's Office of Vocational Rehabilitation. OVR can provide a variety of services to disabled persons whose disability results in a substantial handicap to employment. OVR cooperates and works closely with both the student and the postsecondary institution to make supportive assistance available.

Vocational rehabilitation counselors provide counseling and guidance to assist disabled students in choosing an appropriate vocational goal, and can assist students in obtaining employment upon completion of a degree. OVR can arrange for supportive services which are necessary to enable a disabled person to complete a vocational goal. In addition, OVR may be able to assist in the financing of tuition and other related costs for individuals of limited financial means. OVR has 16 district offices located in communities throughout the State, and should be consulted by both students and postsecondary institutions for available assistance.

The State Commissioner of Labor has pointed out that "The access of disabled students to job placement services is an area where the Labor Department can assist the State Education Department in developing a placement program. Job Service Employment Interviewers, located in almost fifty colleges and universities throughout New York State, place college students and graduates. We are sure that this established placement network can be tailored to meet the needs of disabled students."

The Regents welcome this offer of assistance from the Commissioner of Labor. While the issue of providing enhanced support services goes beyond the job placement function, they believe that colleges and universities planning such cooperative endeavors should carefully review the ability of the Job Service, in addition to the Office of Vocational Rehabilitation, to assist them. The Education Department will cooperate with the Labor Department to assist colleges in this endeavor.

Issue 2. Ensuring that full-time or part-time students who are unable to meet the cost of whatever higher education program suits their qualifications and interests can overcome financial barriers to access.

One of the major ways in which New York has attempted to minimize financial barriers to participation in postsecondary education has been the operation of its student aid programs. New York has the largest program of state student grants in the nation. In 1983 it accounted for almost one-third of all funds spent by all the states on student grants. The use of student aid to minimize barriers to postsecondary education has a long tradition in this State; it dates back to the establishment of the Regents College Scholarship program 71 years ago. Given that tradition, and the State's current commitment to student aid, assuring the adequacy of student aid will continue to be a principal means of minimizing financial barriers to participation.

In New York State, total Federal, State, and institutional student assistance program expenditures are just over ten percent of all student aid expenditures in the nation, which totaled about $17.5 billion in 1983-84. In 1983-84, the major New York State and Federal programs of student financial assistance are estimated to have spent more than $1.8 billion in New York. That sum includes the major grant, work, and loan programs; it does not include smaller State and federally operated programs, SUNY tuition waivers, or institutional aid. Almost 80 percent came from Federal programs; as large as they are, New York State programs provided only 20 percent of the total assistance provided. The single largest source of student assistance was the Guaranteed Student Loan program, under which the New York State Higher Education Services Corporation guaranteed an estimated $1.009 billion in loans in 1983-84 (including loans for study outside New York and at eligible nondegree institutions in New York).

In addition to promoting access, student financial aid also serves as an important means of institutional support. In 1981-82, grants to students from governmental and institutional sources totaled approximately $793 million at New York's public, independent, and proprietary degree-granting institutions. This equaled about 37 percent of their total tuition and fee revenues that year. Student assistance of all forms that year was some $1.9 billion (including $983 million in Guaranteed Student Loans), representing about 90 percent of tuition and fee revenues and 28 percent of total institutional revenues. While not all assistance is necessarily applied to tuition and fees, the comparison is useful because tuition and fee revenue is a major source of income for institutions. (For further discussion of this topic, see also the chapter on Effective Use of Resources, below, and Appendix B.)

Any analysis of student aid is complex and difficult because the field is characterized by a lack of planned coordination and a variety of funding sources, application procedures, and financial needs tests. An assessment of the relationship between student aid and access is to some extent affected by that complexity. The Regents are especially concerned about the magnitude of, and the interrelationships among, Federal, State, and other sources of student aid, in order to assure their adequacy to meet the needs of students—particularly lower-income students. Table 3, below, displays the changes in State and Federal student assistance expenditures in New York between the 1979-80 and 1983-84 academic years. Over that five-year period, those expenditures grew by 25.6 percent, from slightly more than $1.435 billion to more than $1.8 billion. An extension of recent trend lines indicates that total expenditures could be in the neighborhood of $2.1 billion in 1985-86. However, the growth in student assistance in recent years has failed to keep pace with inflation. According to an estimate by the Higher Education Services Corporation, the real value of total student aid from government sources, adjusted for inflation, declined by 21 percent between 1980 and 1983.

In recent years, the Education Department and the Higher Education Services Corporation have begun relatively comprehensive efforts to promote understanding of the effectiveness of student aid programs. The Services Corporation has contributed to the understanding of the effectiveness of student aid programs through several reports based on a survey to determine how postsecondary students financed their educations in 1981-82. Its report, "Utilization of Financial Aid and Family Resources in Meeting College Costs," provided findings on characteristics of aid recipients, financial aid and costs, use of aid, and the financial need gap (the difference between need and available resources).

Although the findings of the research efforts by the Department and by the Corporation have been useful, there are areas in which information is limited. For example, more information is needed on the family incomes of both recipients of student aid and nonrecipients. The degree to which students from minority and low-income populations are served by aid programs is not clear.

There is considerable concern about the gap between financial need and available resources, particularly in a period characterized by rising costs and a decline in the real value of student aid funding (particularly from Federal programs). The Corporation's survey points to this shortfall; average total aid for undergraduates in 1981-82 was less than average need for students with family incomes under $30,000, and greater proportions of unmet need existed for low-income families.

The matter of the "need gap" requires further study. To what extent is unmet need related to family willingness or ability to pay an expected contribution? Is the fact that large proportions of students with unmet need remain in college attributable to greater family sacrifices, or reduction of nondirect costs, or the unreliability of student expense budgets?

The data displayed in Table 3 reveal a disturbing trend. Over the five years from 1979-80 to 1983-84, total expenditures for student loans grew by 31.6 percent, while total expenditures for student grants and work grew by only 18.4 percent, or by less than 60 percent of the rate of growth for loan expenditures. Consequently, while loans constituted 54.3 percent of total student assistance expenditures in 1979-80, and grants/work constituted 45.7 percent, by 1983-84 loans constituted 56.9 percent, and grants only 43.1 percent, of such expenditures. While New York spent 35.9 percent more in State funds on the Tuition Assistance Program in 1983-84 than in 1979-80, Federal Pell Grant expenditures were only 11.7 percent higher; expenditures under the Guaranteed Student Loan program grew by 41.1 percent. The data indicate a growing reliance on loans as a source of student assistance that is potentially an over-reliance.

Further evidence of this trend exists. Through the Department's annual data collection for the Higher Education Data System, New York's public, independent, and proprietary degree-granting institutions furnish considerable information about Federal and institutional aid programs. This information is augmented by reports from the Higher Education Services Corporation on State-administered programs. Data are now available for 1980-81 and 1981-82, as displayed in Table 4.

Between 1980-81 and 1981-82, grants declined from 54.4 percent of all aid to undergraduates to only 47.4 percent, and loans grew from 39.8 percent to 46.8 percent.

Two cautions must be expressed in interpreting these data. First, 1981-82 was an atypical year. A combination of the liberalization of the Guaranteed Student Loan program by the Education Amendments of 1980 and the restrictions imposed on that program by the Postsecondary Student Assistance Amendments of 1981 probably caused loan volume that year to be higher than normal, as students borrowed before new restrictions and higher interest rates came into effect. The second, simply, is that it is not possible to observe trends from only two years' data. Nevertheless, these data do tend to confirm the trends observed for student assistance expenditures between 1979-80 and 1983-84.

The Regents continue to believe that loans should continue to be generally available to students and parents as a source of financing postsecondary education. This does not mean that loans are appropriate forms of financing for all students. Loans are not aid in the same way that grants are; since they must be re-

Table 3
STATE AND FEDERAL STUDENT AID EXPENDITURES IN NEW YORK STATE MAJOR PROGRAMS, 1979-80 - 1983-84 (IN MILLIONS OF DOLLARS)

PROGRAM	ACADEMIC YEAR 1979-80	1980-81	1981-82	1982-83	1983-84 (estimated)	Change 79-80/83-84 (percent)
Grants - NYS						
Tuition Assistance Programs	$ 240.6	$ 244.8	$ 272.3	$ 292.9	$ 326.9	35.9%
(TAP)	(240.6)	(244.8)	(262.9)	(279.5)	(308.8)	28.3%
(STAP)	--	--	(9.4)	(13.4)	(18.1)	--
Regents Scholarships	18.1	17.8	17.5	16.9	16.3	-9.9%
Total	258.7	262.6	289.8	309.8	343.2	32.7%
Grants & Work-Federal						
Pell Grants	316.0	312.0	304.0	324.0	353.0	11.7%
SSIG	7.3	6.6	6.6	6.3	5.1	-30.1%
SEOG	25.5	30.0	28.7	27.4	27.5	7.8%
CWS	48.0	52.3	43.0	42.5	47.4	-1.3%
Total	396.8	400.9	382.3	400.2	433.0	9.1%
Loans-NYS						
State Supplemental Loans	33.0	41.0	26.2	0.6	0.5	-98.5%
Loans-Federal						
NDSL	31.6	26.3	15.0	16.0	16.4	-48.1%
GSL	715.2	833.2	1,136.6	963.4	1,009.1	41.1%
Total	746.8	859.5	1,151.6	979.4	1,025.5	37.3%
Total Grants	655.5	663.5	672.1	704.0	776.2	18.4%
Total Loans	779.8	900.5	1,177.8	979.4	1,026.0	31.6%
Total State	291.7	303.6	316.0	310.4	343.7	17.8%
Total Federal	1,143.6	1,260.4	1,533.9	1,379.6	1,458.5	27.5%
GRAND TOTAL	$1,435.3	$1,564.0	$1,849.9	$1,690.0	$1,802.2	25.6%
Proportion, Grants/TOTAL	45.7%	42.4%	36.3%	42.0%	43.1%	
Proportion, Loans/TOTAL	54.3%	57.6%	63.7%	58.0%	56.9%	
Proportion, State/TOTAL	20.3%	19.4%	17.1%	18.4%	19.1%	
Proportion, Federal/TOTAL	79.7%	80.6%	82.9%	81.6%	80.9%	

Source: NYSED, Bureau of Postsecondary Planning, 1984.

Table 4

DISTRIBUTION OF STUDENT FINANCIAL ASSISTANCE BY TYPE OF ASSISTANCE, STATEWIDE 1980-81 AND 1981-82

	Undergraduates		Graduate Students	
	1980-81	1981-82	1980-81	1981-82
Grants	54.4%	47.4%	20.1%	17.5%
Loans	39.8	46.8	65.4	65.4
Assistantships	0.3	0.6	9.6	12.0
Wages	5.3	5.0	4.9	5.0
All Other Forms	0.2	0.2	0.0	0.1
TOTAL	100.0%	100.0%	100.0%	100.0%

paid, they are a deferred cost to the student. For 1982-83, across all sectors and income levels, the Higher Education Services Corporation reports the following ranges of accumulated indebtedness:

Freshman:	$2,404 to $2,644
Sophomores:	$4,090 to $4,461
Juniors:	$4,925 to $5,166
Seniors:	$5,848 to $7,224
Fifth Year (Undergraduate):	$6,035 to $7,580
Graduate:	$11,192 to $13,549

In other words, persons earning baccalaureate degrees in 1982-83 were saddled with debts of between $5,850 and $7,600.

It is essential that students from low income families receive sufficient aid in the form of grants to assure that they are not overburdened by debt.

High levels of indebtedness for undergraduate study carry serious implications for study at the graduate level, where most assistance currently is in the form of loans. As noted in Table 4, above, in 1981-82, 65.4 percent of all assistance to graduate students in New York (across all sectors) was in the form of loans; grants constituted only 17.5 percent; and wages and assistantships provided only 17 percent. The addition of indebtedness incurred for graduate study to debt incurred as an undergraduate can leave individuals crushed by unmanageable burdens of debt. A 1982 study by the Educational Testing Service discovered that almost half of the persons earning Ph.D.'s in the arts and sciences, and over 80 percent of graduates of medical and law schools, had what were characterized as unmanageable debts. Many careers that require graduate education, such as teaching, do not promise the income necessary to permit repayment of substantial loans.

It is essential, then, to assure that State and Federal programs of student grants and employment are adequate resources for students. Since 1980, the Regents have advocated that Federal grants to students in combination with direct payments by students and families should equal half of the actual cost of postsecondary attendance. Other Federal assistance programs, such as loans and work study, together with State and institutional student aid and family or student loan obligations, should provide the remaining half of postsecondary attendance costs. In other words, the combination of a Pell Grant, a Supplemental Educational Opportunity Grant, and the contribution expected from the student and his or her family should equal one-half of the actual cost of tuition and fees, room and board (for a resident student) or meals (for a commuting student), transportation, and books and supplies. State student aid, institutional student aid, work-study, and loans should equal the other half.

Of the estimated $776.2 million expended in New York in 1983-84 for student grants and work, 44.2 percent was from State funds and 55.8 percent was from Federal funds. This represents a notable shift from 1979-80, when 39.5 percent came from State funds and 60.5 percent from Federal funds. Over the five-year period, State expenditures for the Tuition Assistance Program grew by 35.9 percent; Federal Pell Grant expenditures in New York grew by only 11.7 percent; other, smaller, Federal program expenditures in New York also had little growth, or declined.

The following table (5) displays changes since 1979-80 in the award schedule for the Tuition Assistance Program, including the TAP enrichment enacted by the Legislature in 1984.

Table 5
TUITION ASSISTANCE PROGR[illegible]
MAXIMUM AND MINIMUM UNDERGRADUATE AWARDS AND INCOME CEILINGS (DEPENDENT STUDENTS)
1979-80 - 1984-85

Year	Maximum Award (but not to exceed tuition)	Net Taxable Income Ceiling for Maximum Award	Minimum Award	Net Taxable Income Ceiling for Minimum Award
1979-80	$1,800	$2,750	$200	$20,000
1980-81	1,800	2,750	200	20,000
1981-82	2,200	4,000	250	25,000
1982-83	2,200	4,000	250	25,000
1983-84	2,200	4,000	250	25,000
1984-85	2,700	5,000	300	29,000

[1] phased-in with first-time recipients in 1981-82

[2] for all recipients beginning in 1981-82

[3] for all recipients, beginning in 1984-85, at not-for-profit institutions

[4] for all recipients beginning in 1984-85

Source: NYSED, Bureau of Postsecondary Planning, 1984.

In 1981-82, the maximum Tuition Assistance Program undergraduate award—the award available to undergraduates in the lowest income category—was $2,200. The weighted average full-time undergraduate tuition and fees charged in the independent sector that year was $4,571. Effective for the fall of 1984, the maximum undergraduate TAP award has been increased to $2,700; average undergraduate tuition and fee charges will be $6,124 in the independent sector in 1984-85, as calculated by the Commission on Independent Colleges and Universities from independent college master plans. According to CICU, the independent institutions project that their average undergraduate tuition and fee charge will be about $7,700 in 1988-89 and about $9,318 in 1992-93.

Among Federal student assistance programs, the Pell Grant program is the nation's basic student aid program. Until 1981, the Congress was authorized to appropriate "such sums as may be necessary" to meet the program's needs. In 1981, however, the Postsecondary Student Assistance Amendments act imposed maximum authorizations for Pell Grant appropriations for the 1982, 1983, and 1984 Federal fiscal years.

In enacting the Education Amendments of 1980, the Congress authorized increases in the maximum Pell Grant, from $1,800 in 1980-81 to $2,600 in 1985-86, together with increases in the proportion of cost of attendance that a grant could cover. However, funding levels have provided smaller maximum grants than the levels authorized, as displayed in the following table (6).

Table 6

PELL GRANT MAXIMUM AWARDS
1979-80 - 1985-86

Academic Year	Maximum Authorized	Actual Maximum	Difference	Maximum Proportion of Cost Authorized	Maximum Proportion of Cost Actual
1979-80	$1,800	$1,800	$ 0	50%	50%
1980-81	1,800	1,750	50	50%	50%
1981-82	1,900	1,670	230	50%	50%
1982-83	2,100	1,800	300	60%	50%
1983-84	2,300	1,800	500	65%	50%
1984-85	2,500	1,900	600	65%	50%
1985-86	2,600	--	--	70%	--

Source: NYSED, Bureau of Postsecondary Planning, 1984.

For Federal student aid programs authorized by Title IV of the Higher Education Act, 1984 appropriations are almost 41 percent below the level authorized by the Education Amendments of 1980.

For the forthcoming reauthorization of the Higher Education Act, the Regents will work with the State's higher education community to seek a common understanding on revisions to Federal programs that will support this Plan. The Regents believe that one of the most significant revisions needed in the Higher Education Act is restoration of "entitlement" status to the Pell Grant program. It also is clear that the level of the maximum Pell Grant needs attention. The $1,900 maximum grant for 1984-85 is less than half the actual cost of attendance for a resident undergraduate at virtually any institution in New York State. The Regents purpose is to achieve a real increase in aid to low-income students, considering Pell Grants together with TAP and other sources of assistance.

At the graduate level, the Department's doctoral program evaluation project has found that aid of a significant amount has been provided to only a small proportion of New York's doctoral students in the arts, humanities, and social sciences. Much of the aid provided is in the form of tuition waivers and assistantships, often from institutional sources. As noted in Table 4, above, in 1981-82 only 17.5 percent of the aid to master's degree, doctoral, and first-professional degree students in New York was in the form of grants, while 65.4 percent was in the form of loans. Almost 62 percent of the grants was from institutional sources; about 28 percent was from New York State, Federal, and other governmental sources. The remainder was provided by private sources.

The extent of graduate student dependence on loans is heavy and growing. In 1980-81, 55,360 graduate students in New York borrowed almost $185 million in Guaranteed Student Loans administered by the Higher Education Services Corporation, or an average of more than $3,300 each. In 1981-82, the number of graduate student borrowers increased by 10.6 percent, to 61,237; they borrowed over $221.6 million, an increase of almost 20 percent over 1980-81. The average loan had risen to over $3,600.

The fact that almost two-thirds of all assistance to graduate students in 1981-82 was in the form of loans is disturbing. National studies have confirmed that adequate financial aid fosters both entry into and persistence in graduate education for members of minority groups. They reveal a positive correlation between financial aid (especially fellowships and assistantships) and enhanced interest, involvement, and success by minority students. In its 1981 final report, the national Commission on the Higher Education of Minorities recommended

> that federal, state and institutional policy makers increase financial aid for minority students at the graduate and professional levels. In particular, every effort should be made to expand the number of assistantships available to minority graduate students, since this form of aid seems to intensify student involvement in graduate study, promote professional development, and strengthen the bond between student and faculty mentor.

The Commission found that "Teaching, administrative, and research assistantships that promote professional development are preferable to loans, which do little to encourage students to participate in the apprenticeship that is such an important aspect of the graduate experience." In New York, in 1981-82, almost 13,000 graduate and first-professional degree students received assistantships worth almost $50 million (an average of almost $4,000 each), but that sum constituted only 12 percent of the total assistance for graduate study and the recipients represented less than 20 percent of all full-time graduate and first-professional degree students in the State.

Financial difficulties often are cited as the major reason for students not completing their studies more rapidly, or discontinuing them altogether. Proportionally, more graduate students are enrolled part time, while working, than attend full time. In 1981-82, 61.3 percent of all master's and doctoral degree students in New York were part-time, and in some fields the proportion was considerably higher, including business and management, computer and information sciences, education, the health professions, and library science. This condition detracts from concentrated study and adds to the number of years required to complete the degree. Faculty are thereby accountable for students for longer periods of time, often with contacts which are less frequent and more superficial in nature. This situation is not conducive to maintaining excellence in graduate programs.

The foregoing suggests one of the principal reasons why financial aid for graduate study continues to be necessary; there must be a reasonably steady flow of graduate students to provide the critical mass necessary to sustain programs of high quality. An extension of that concept is that a reasonable proportion of the most able undergraduates must be encouraged to consider the graduate study that will produce the faculty of the future. Accordingly, financial aid must be available generally. This need not imply massive programs of aid; rather, the critical need is for special incentives for the most promising students to seek advanced study in programs that are well matched to their abilities and needs.

Actions

During the period of this plan the Regents and the Department:

2-a. Will develop a State legislative proposal for a new, substantial program of aid to students in exchange for performance of varied, specific forms of public service. Such aid would be repayable, with interest, should the recipient not meet the public service obligation.

2-b. Will develop State legislative proposals that address the adequacy of the State's current student grant programs to meet the needs of (a) students from low-income families, (b) graduate students, (c) part-time students, and (d) independent students; and to reduce reliance by lower-income students on loans to meet college-going costs.

RECOMMENDATIONS

2-d. The Regents commend the Governor and the Legislature for enhancing the Tuition Assistance Program for full-time undergraduates and for establishing a new student aid program for part-time undergraduates, and recommend that the Governor join them in efforts to assure (1) that reauthorization of the student aid programs established by the Federal Higher Education Act meets the needs of New Yorkers and (2) that appropriations are adequate to meet the needs of students. It is especially important (a) that Federal student aid programs provide adequately for the needs of low income students; (b) that the maximum Pell Grant, which currently equals less than half the actual cost of attendance for a resident undergraduate at almost all institutions in New York, be increased; (c) that the Supplemental Educational Opportunity Grant, College Work-Study, and Cooperative Education programs be enhanced; and (d) that aid for graduate students be enhanced and funded.

The review of this issue has concentrated on student aid as a strategy to minimize financial barriers to access. The State University and City University master plans take a different view. State University points out that "public institutions of higher education are unique in at least two significant respects." First, "public higher education offers its benefits to all who can profitably make use of them." Second, "public higher education is directly answerable to the society at large." Supported by public funds, the State University "has a mandate to deploy its resources in pursuit of the public good." Since 1948, SUNY has moved quickly to accommodate students from a broad social base, especially through its Educational Opportunity Centers, Educational Opportunity Programs, and the full opportunity admissions policy of the community colleges, according to its master plan. Therefore, the University states as a recommendation that "The University is committed to low tuition" (#21).

"Public higher education rests on twin foundations of high quality and wide access," according to State University. "Low tuition goes further toward guaranteeing educational opportunity for all income levels than any of the student aid programs, which simply cannot provide enough assistance to counter escalating costs for a full range of students. While the University supports financial aid as a way to assist students in meeting their educational expenses, student aid must always be viewed as a supplement to and not a substitute for low tuition."

According to the master plan of The City University of New York, the City University is determined to maintain and expand its commitment to academic excellence while providing equal access to the diverse racial and ethnic population of the city it serves. Its intention is to provide the people of New York with access to a University that is distinguished academically and dedicated to the principle that higher education is the single most powerful instrument of personal advancement in our society: "The philosophy of The City University has long been rooted in the conviction that every man and woman who wants a quality college education should get one, regardless of social or economic condition." In the coming years the City University plans to do its utmost to maintain its commitment to open access and opportunity.

Aid for part-time students remains the central issue for access, according to CUNY. Nearly 60 percent of its 56,000 part-time students would be eligible for financial aid under the Tuition Assistance Program if it were extended to this class of students. For the 25,000 single parent students enrolled, the University is seeking tax levy support for the establishment and maintenance of child care centers at the senior colleges. The University states as one of four major aims: "To provide a comprehensive financial aid system which includes part-time students."

City University says that "No public policy is more important to retaining access, excellence and choice in New York State's public higher education system than the maintenance of the lowest possible tuition level. A necessary corollary to low tuition is a comprehensive system of tuition assistance for students unable to meet even modestly priced tuition."

In 1960, the State University Trustees said in their master plan, "The principle of low-cost education should govern all deliberations on the subject of tuition levels. To rationalize a tuition policy which would restrict college opportunities would be self-defeating and indefensible." Twenty years later, the 1980 master plan of State University said,

> We believe that the availability of low tuition for public higher education is equally as important to our society today as it has been over the past 200 years. Low tuition offers a more certain long-term guarantee of educational opportunity for all income levels than various student aid programs. Student financial aid simply cannot provide enough assistance to a broad range of students to match tuition.

The 1980 State University master plan stated as a recommendation that "The University will seek to maintain low tuition for public higher education." The Regents approved that recommendation in the 1980 Statewide Plan.

In 1960, there was no general undergraduate tuition charge at State University. In 1963-64, a uniform $300 per year tuition charge was introduced for full-time undergraduates who were State residents. Today, that charge is $1,350. In the 20 years since 1963-64, State University undergraduate tuition increased by over $1,000.

Education Law vests authority to set tuition charges at the City University and at the State-operated campuses of State University in their respective boards of trustees. Each board has expressed a commitment to the maintenance of low tuition. Despite that commitment, State University's tuition increased by 350 percent over 20 years. Neither the State University Trustees nor the City University Trustees has adopted a statement of what its "low tuition" policy means. It would be consistent with the authority to set tuition charges granted by Education Law for each board to adopt a detailed statement of policy to guide the setting of tuition levels.

Actions

During the period of the Plan, the Regents and the Department:

2-c. Urge the State University Trustees and the City University Trustees each to elaborate on its tuition policy by adopting a detailed statement of policy to guide the setting of tuition levels that includes criteria to guide the determination of those levels.

The proprietary sector master plan expresses the concern that student access is seriously limited by financial barriers. It states that tuition and other costs have increased substantially while outlays from public financial aid programs have stabilized or been restricted. The master plan suggests that a statewide commission be established with representatives from each sector and other appropriate State organizations to develop more suitable funding policies and practices. The agenda for such a commission should include an evaluation of public rules and regulations, an analysis of the tuition gaps, an investigation into the student voucher system, and a study of the Tuition Assistance Program (including the possibility of TAP for part-time students). The proprietary sector master plan points out that students enrolled in a proprietary institution are prohibited from participating on-campus in Federal College Work-Study programs, and states that a change in this current eligibility requirement is essential for increasing access and overcoming financial barriers.

The proprietary institutions recognize the value of work-study and cooperative education experiences for the individual student. To fully develop student financial aid opportunities, they recommend "the establishment of on-campus work-study programs" in the proprietary sector (B.5.). The Regents have approved that recommendation in principle (see the summary of the proprietary sector plan in Volume III). The financial aid package for the student attending proprietary institutions includes a sizable loan commitment due to the present funding limitations from both public and private sources.

As an important benefit for all students seeking access to a career education, the proprietary institutions fully support development, during the period of the Statewide Plan, of consensus on the definitions of "student need" and of "unmet student need," and on a system of monitoring unmet student need after State, Federal, and institutional student aid is taken into account. To promote access, the proprietary sector master plan further recommends that "by 1986, The Regents, the Department of Commerce and the Association of Colleges and Universities of the State of New York develop and implement a coordinated 'I Love New York Colleges' campaign to bring to postsecondary students, both in New York and out of state, information about the strength, diversity and uniqueness of higher education in New York" (D.1). A similar recommendation is included among those submitted by the Commission on Independent Colleges and Universities (#15).

In its recommendations CICU points out that lack of information about financial aid can in itself be a barrier to access. CICU therefore makes a number of recommendations concerning better communication of such information. Among them are that the Department provide New York high schools "daily telecommunications access via computer terminals with the Department's data bank of registered programs" (#9); that the Department "coordinate with the Higher Education Services Corporation, the New York State Financial Aid Administrator's Association and the central admissions offices of each sector of the University of the State of New York (USNY) to offer *one* annual admissions and financial aid workshop for high school guidance counselors in each region of the state" (#11); and that the Department and the Higher Education Services Corporation "coordinate, with each sector of USNY and with the New York State Financial Aid Administrators Association, a series of communication updates for guidance counselors to inform them of new developments in college academic and financial aid programs" (#12). The broadest possible dissemination of relevant information to prospective students is important. These recommendations deserve further study in consultation with the other suggested parties.

CICU also recommended that the Regents "reaffirm their 1972 Master Plan recommendation that the Legislature annually adjust the state's program of student financial aid to achieve an adequate level of support in relation to the price students and parents must pay to attend colleges of their choice" (#17).

Individual independent colleges suggested such student aid changes as expansion of the Federal College-Work Study program; extension of eligibility for Pell Grants to include the first two years of graduate study; coordinating Pell Grants and Guaranteed Student Loans by increasing Pell Grants for lower-division study to minimize GSL use in those years, with reduced grants and increased loans for upper-division study (together with increased GSL loan limits); basing eligibility for Federal student aid on total cost of education; establishment of a Federal savings program similar to New York's PASS program; extending TAP to part-time study and enriching TAP for graduate study; and establishing a revolving student loan fund at the State level.

Beyond any specific changes in New York's student aid programs, the Regents see a need for continued review of the State's student aid policies. In such a review, particular attention should be paid to:

1. The need to establish goals for the State's student aid programs and methods of setting priorities among those goals so that the State's programs, together with Federal programs, will promote maximum effectiveness of State funding. In this context, issues that should be considered include:

— What kinds of student costs should the State attempt to meet? Should the State continue its commitment to meeting tuition charges through TAP, or should other costs be included?

- If nontuition costs are to be included, what kinds are appropriate? What proportions of nontuition costs, if any, should the State attempt to meet?
- What proportions of costs should be met through Federal and institutional aid programs and through family and student contributions?

2. The determination of how, and to what extent, existing Federal, State, and institutional aid programs work together to meet student financial need and cost of attendance.

- To what extent are State, Federal, and institutional aid programs used by students of varying income levels in the different sectors?
- To what extent, if any, do programs overlap?
- How well can unmet need be identified? Is it due entirely to inadequate program funding or does it, to some extent, reflect inequities in the distribution of resources or student and family inability or unwillingness to contribute?

3. The identification of alternative ways through which existing programs and available resources can best serve the needs of students and their families, institutions, and the State.

- Is it feasible or desirable to base possible changes in State student aid policies on assumptions about the direction of Federal programs?
- Should the State, working with institutions, use a common student aid application procedure to facilitate the delivery of aid while permitting the State to improve the allocation of its funds?
- Can student access and choice be better served by more equitable packaging of grants, loans, and student employment?

Issue 3. Increasing the representation of minorities and women among college and university faculty and professional staff.

Minorities and women are generally underrepresented among college and university faculty and professional staff. While some progress has been made in recent years to correct this historical underrepresentation, it will be extremely difficult in the conditions of the 1980's and 90's even to maintain current levels if enrollments continue to decline and tenure and seniority principles require that the last hired be the first laid off.

The percentage of minorities among full-time instructional faculty differed among the sectors of higher education in New York in 1981-82. The City University had the highest percentage of black and Hispanic faculty members, with 10.3 percent and 4.5 percent respectively (compared with 2.5 percent and one percent respectively for State University, and 1.9 percent and 1.6 percent in the independent sector). The following tables show the extent of underrepresentation of minorities and women on college and university faculties:

Table 7

PROPORTION OF RACIAL/ETHNIC GROUPS AMONG FULL-TIME INSTRUCTIONAL FACULTY IN NEW YORK STATE IN 1981-82
(TOTAL 39,729)

	Percent
Non-Resident Alien	1.2
Black, Non-Hispanic	3.4
American Indian or Alaskan Native	0.1
Asian or Pacific Islander	3.4
Hispanic	1.8
White, Non-Hispanic	86.9
Unknown	3.2
TOTAL	100.0

Source: NYSED, Office of Postsecondary Policy Analysis, 1984.

Table 8

NEW YORK STATE SALARIED, FULL-TIME INSTRUCTIONAL FACULTY
1981-82
(excludes faculty members who contributed their services)

		Total Number of Persons		Total With Tenure	
9-10 Month Contract	Men	23,431	72.3%	16,699	78.1%
	Women	9,977	27.7%	4,681	21.9%
	TOTAL	32,408	100.0%	21,380	100.0%
11-12 Month Contract	Men	2,159	66.8%	826	83.6%
	Women	1,074	33.2%	162	16.4%
	TOTAL	3,233	100.0%	988	100.0%
GRAND TOTAL		35,641		22,368	

Source: NYSED, Office of Postsecondary Policy Analysis, 1984.

Available data on salaries by sex illustrate another dimension of the problem. Nationwide and in New York, women appear to earn less then men at the same rank. According to data for 1982-83 collected by the National Center for Education Statistics, the average salaries in New York for the top three ranks, aggregated across all institutions were:

Men	Women	Ratio*
$31,949	$26,816	84%

Although some increases in the number of women and minority faculty members have resulted from affirmative action efforts in recent years, the data presented above show that the problem has by no means ceased to exist. Minorities and women appear underrepresented, and women appear to receive lower salaries than men. However, aggregate salary data do not reveal variations which exist among institutions and individuals. Apparent salary disparities may be related to factors other than gender; for example, matters such as years of service, research and publication records, additional responsibilities, entering salary, etc. may have an effect on compensation levels. Institutions need to consider the salary equity situation of each of their faculty members. Similarly, problems of underrepresentation still seem to exist among senior administrative ranks. For example, of the 250 college and university chief executive officers in New York in 1983-84, only 46 (18.4 percent) were women. That represents a significant improvement over 1974-75, when only 24 out of 246 chief executives were women (9.8 percent). However, a *majority* of the students at New York's colleges and universities today are women.

According to its master plan, for a number of years State University has been implementing a strong commitment to affirmative action through a broad set of policies and procedures; however, women, minorities, and the handicapped are still underrepresented in the University as a whole, particularly in certain traditional professions and high demand fields. In some instances, too, size and location of programs have inhibited participation by women, minorities, and the handicapped. The University will continue to modify its practices and academic structure as necessary to increase educational and employment opportunities for individuals from underrepresented groups. In many instances, however, additional support will be necessary to reach the University's affirmative action goals, according to the State University master plan.

The issue of relatively low numbers of minorities and women on the faculty and professional staffs of colleges and universities concerns the higher education community. Although this problem cannot be solved at the college level, a number of initiatives may be undertaken by postsecondary institutions. According to State University, introducing greater retirement incentives may reduce the problem, since faculty eligible to retire are more likely to be white males. The possibility of part-time employment leading to tenure could be explored. Also, college faculty could work more directly with high schools which have large minority populations in order to influence students to pursue college teaching careers.

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* Female salary as percentage of male salary.

The Commission on Independent Colleges and Universities recommends that the Commissioner of Education appoint a task force "to develop options for the improvement of campus flexibility and advancement of personnel including women and minorities" (#4). In the independent sector, Albany Medical College, Marist College, Rochester Institute of Technology, St. John's University, and Sarah Lawrence College all reported special programs to recruit minority faculty members. Hofstra University has added full-time, tenure-track positions beyond the number of positions budgeted, when qualified minority candidates are available.

The consolidated master plan of the proprietary sector reports that women and minorities are well represented on the faculty and professional staffs of proprietary institutions. For example, in 1983, approximately 55 percent of the full-time faculty were women. The current representation of minorities is about ten percent. The high percentage of women professionals is a long-standing tradition; the more recent employment of minorities is related to the metropolitan location of most colleges and the expansion of programs. There is no need in the proprietary sector for new financing arrangements relating to buy-outs and other early retirement procedures. The proprietary institutions do not share a common retirement plan. Tenure generally is not available; therefore, the colleges have flexibility in employment practices.

The Regents seek an increase in the percentage of women and members of minority groups among faculty members in the professor or associate professor ranks or who are tenured. Colleges and universities can directly address the issue of underrepresentation of members of minority groups and of women among faculty and professional staff, especially in high demand areas such as the sciences, by continuing to pursue affirmative action plans and by offering incentives and options such as part-time positions to faculty who retire early, thereby creating openings that may be filled by qualified women or minorities. However, the issue of increasing the representation of minorities and women among college and university faculty and professional staff is multifaceted. The problems involved are too broad and complex to be solved by a single set of initiatives. In approaching the issue it is important to recognize that the development of a career in college teaching involves a series of preliminary steps, culminating in appointment to a faculty position. Thus, the problem must be addressed at various points along the pipeline, especially in regard to minorities.

Most college faculty positions require a doctoral degree. Of the doctorates awarded in New York State in 1980-81, blacks received five percent; Asians, 4.9 percent; Hispanics, 2.1 percent; and native Americans, 0.2 percent, for a total of 12.2 percent awarded to minorities. Women received 36.1 percent of the doctoral degrees conferred in 1980-81 and men 63.9 percent (in the U.S. as a whole, the proportions were 31.5 percent female and 68.5 male that year). The doctorate is normally the last step along the "faculty pipeline." These figures indicate that problems arise well before this last step; minorities and women are not getting far enough along in the pipeline in substantial numbers to qualify for faculty positions. Therefore, it is important to trace the steps along the pipeline.

High school dropout rates are significantly higher among minorities than among non-minorities, as Issue 1, above, points out. At the beginning of the 1980's in New York State, over 81 percent of whites and a vast majority of Asians were arriving in 12th grade on schedule, compared to less than 60 percent of native Americans, 47 percent of blacks, and 41 percent of Hispanics. Although in 1980 minority students comprised 19.8 percent of all degree-credit enrollments at degree-granting institutions in New York State, the pool of minority students eligible to go on to college has never come close to realizing its potential. It should also be pointed out that minority students completing high school are less likely to attend college and minority students attending postsecondary institutions are less likely to complete undergraduate degree requirements. In addition, relatively few minority students in baccalaureate programs pursue courses of study that lead to enrollment in graduate or professional programs as a logical next step. Even when minority students enter graduate programs, there are obstacles which impede their completion of the programs. These obstacles were identified by the Regents in their report, "Increasing Minority Access to the Licensed Professions." They are essentially the same for graduate programs in general as for programs in the professions:

1) Lack of adequate financial aid;

2) Lack of prerequisite academic skills for admission into graduate programs, which must be obtained at the undergraduate level;

3) Lack of supportive service systems for minority students who matriculate into graduate programs;

4) Perception of an institution's environment as nonsupportive to minorities: low minority enrollments and lack of institutional concerns for minority students contribute to a sense of isolation and can impede progress toward successful completion of degree requirements;

5) Lack of information: minority students often are

not aware of the career and employment opportunities available in the various professions.

In order ultimately to resolve the underrepresentation problem, the report on minority access to the professions identified the major leakage points along the "pipeline" culminating in the graduate degree. The primary leakage point seems to be the disproportionate number of minorities who drop out of high school. Therefore, steps need to be taken to increase the numbers of minority students completing high school. After minorities enter college, further steps must be taken to decrease attrition. The 1984 Regents legislative proposals set forth policy initiatives aimed a assisting minorities in their pursuit of educational opportunities, including:

- An increase of $5 million in the appropriation for the Higher Education Opportunity Program for supportive services, financial aid, and expanded enrollments;
- Two proposals to assist minorities through summer enrichment programs, one for secondary students and a second one for postsecondary students.

As a result of the study, "Increasing Minority Access to the Licensed Professions," the Regents added the following bills to their 1984 legislative program:

- The establishment of an incentive program which builds upon existing undergraduate special opportunity programs (HEOP, EOP, SEEK) to increase the number of disadvantaged and minority students preparing for professional careers;
- The establishment of a grant program to be administered within graduate and professional schools, delivering supplemental financial aid and academic support services;
- Linkages for Educational Access to the Professions (LEAP) through the establishment of regional consortia that include representation from all levels of education, the professions, industry, and other interested groups, to provide a comprehensive program, beginning at the elementary school level and extending through professional licensure, which would provide academic and other support aimed at increasing the number of disadvantaged and minority students in educational programs that lead to professional careers and careers based in mathematics and the sciences.

The situation for women differs a bit from that presented above for minorities. Women now enroll in postsecondary education in greater numbers than men. In the fall of 1982 women outnumbered men at the undergraduate level (446,832 to 374,937) and the combined graduate levels (73,248 to 67,335). Men outnumbered women at the first-professional level (16,070 to 8,725). From these numbers it might be assumed that women also earn more degrees. This is true at the associate and master's levels. However, men earned 27.8 percent more doctoral degrees and 36.6 percent more first-professional degrees than women in 1980-81. Thus, leakage of women from the pipeline occurs at the doctoral level — the required credential for faculty careers.

Further, the following table of degrees conferred in selected fields on 1980-81 (see p. 24.) shows significantly different distributions of men and women among certain disciplines.

At all levels, the traditional pattern of "men's" and "women's" fields continues to prevail. Women earn more degrees than do men in business and commerce technologies, education, and the health professions. Men earn a far larger proportion of degrees in mechanical and engineering technologies, computer and information sciences, engineering, and the professions of dentistry, law, and medicine. Even in mathematics, where the number of women earning baccalaureate degrees approached the number of men in 1980-81, women received only about 38 percent of the master's degrees and 15 percent of the doctorates awarded. The recruitment of women faculty members presents particular difficulties in these traditionally "male" fields.

The United States Bureau of Labor Statistics predicts that there will be a decline of 15 percent in the demand for college and university faculty through 1995. This will further exacerbate the problem. Every effort must be made, not only at the college and university level, but at all levels of the educational system, to ensure that minorities and women have equal opportunity for access to succeeding stages of the educational "pipeline." Increasing the representation of minorities and women among college and university faculties is the ultimate goal. However, attention to earlier educational stages is necessary — along with the more immediate measures mentioned earlier in this discussion — if this ultimate goal is ever to be achieved.

Actions

The Regents set forth the following activities to be undertaken by colleges and universities during the period of the Plan:

3-a. Implementation of strategies to increase the size of the pool of women and members of minority groups qualified for faculty positions, as set forth in the Regents action paper, "Increasing Minority Access to the Licensed Professions."

Table 9
DEGREES CONFERRED IN SELECTED DISCIPLINES
NEW YORK STATE
1980-81

	Men	Women	Total
Associate			
Liberal Arts	6,547	6,608	13,155
Business & Commerce Technologies	5,770	10,998	16,768
Mechanical & Engineering Technologies	4,564	389	4,953
Baccalaureate			
Computer and Information Sciences	1,116	612	1,728
Education	1,230	4,309	5,539
Engineering	5,214	536	5,750
Health Professions	999	5,699	6,698
Mathematics	629	548	1,177
Master's			
Computer and Information Sciences	387	131	518
Education	1,988	6,917	8,905
Engineering	1,620	138	1,758
Health Professions	436	1,671	2,187
Mathematics	217	132	349
Doctoral			
Computer and Information Sciences	22	1	23
Education	315	327	642
Engineering	236	14	250
Health Professions	40	69	109
Mathematics	72	13	85
First-Professional			
Dentistry	283	60	343
Law	2,292	1,324	3,616
Medicine	1,239	481	1,720

Source: NYSED, Office of Postsecondary Policy Analysis, 1984.

3-b. Development and implementation of programs to recruit, hire, and promote minority and female faculty and administrators, and to provide ongoing activities to orient and sensitize administrators and faculty to the special needs of minority students.

Issue 4. Attracting able students to teaching careers at all levels, particularly in disciplines where shortages are projected, despite discouraging short-term prospects for employment and income.

In recent years the field of teaching has become the focal point of debates and studies at the Federal, state, and local levels. In New York State, particular emphasis has been placed on the following issues, each related to implementation of the Regents Action Plan to Improve Elementary and Secondary Education Results in New York: attracting able students to teaching careers, especially in areas where shortages are projected; improving the quality of teacher education; and improving and expanding in-service education. Various approaches have been proposed to deal with these and other issues related to the field of teaching; some of these are explored below.

Declines in elementary and secondary school enrollments and in the number of persons obtaining teaching certificates are just two of the developments during the last decade which have affected the field of teaching. From 1970 to 1980 the number of provisional and permanent teaching certificates granted in New York State fell from 66,417 to 30,185, a decline of 54.6 percent. In comparison, enrollments in public and nonpublic schools (K-12) declined only 20.1 percent and the number of classroom teachers declined 9.4 percent during the same period.

Elementary and secondary school enrollments are projected to continue to decline until 1988. Over the duration of this Plan these enrollments are expected to decline 4.7 percent, with a projected increase of 1.3 percent for the period 1988-1992. It is important to note that, even though there has been a steady decline in the number of teaching certificates granted over the last decade, there currently is a general oversupply of elementary and secondary school teachers, as evidenced by the number of applications for positions in 1982. There were 72,918 applications for 5,441 open positions (excluding New York City) in selected certification areas. The large number of applications suggests that applicants submitted multiple applications. However, the proportion of applications to positions reflects the oversupply. Essentially, the decline in new teaching certificates has resulted, on the aggregate level, in a decrease in the surplus of teachers.

Aggregate data can be misleading, however. Certain disciplines currently face shortages. For example, between 1968 and 1980 the number of certificates issued in English declined by 74.9 percent, in mathematics by 76.2 percent; and in science, by 84.6 percent. A nationwide survey conducted in 1981 revealed shortages of high school mathematics teachers in 43 of 47 responding states. New York was one of the states reporting a shortage. In addition, 25 percent of mathematics and science teachers responding to a parallel survey said they were planning to leave teaching for jobs in industry. Currently, in New York, shortages of teachers exist or are developing in mathematics, the sciences, foreign languages, occupational education specialties, and special education fields. Table 10, below, showing changes in enrollment patterns in institutions of higher education in New York between 1971 and 1981, provides information supporting the trend away from education and the arts and sciences:

Table 10

PROPORTION OF ENROLLMENT OF FULL-TIME SENIORS IN MAJOR SUBJECT AREAS, 1971 AND 1981

Subject Area	Percent in 1971 (84,486 seniors)	Percent in 1981 (73,823 seniors)
Education	12.8	6.2
Mathematics	3.5	1.5
Computer & Information Sciences	.6	3.8
Physical Sciences	2.8	2.5
Engineering	5.1	9.4

Change in Proportion of Upper-Division
Enrollment From 1971 to 1981

Subject Area	Change in Percent, 1971-1981
Education	-56.8
Mathematics	-65.1
Social Sciences	-40.1
Computer & Information Sciences	+305.7
Business Management	+100.0
Communications	+200.8

Source: NYSED, Office of Postsecondary Policy Analysis, 1984.

Certain geographic regions also are experiencing shortages in the number of teacher applications per open position. A 1982 Education Department survey of professional recruitment and selection by school districts outside New York City revealed that Buffalo, Rochester, Syracuse, and Yonkers had far fewer applications for public school positions than other school districts in the State. In addition, the survey showed that districts of 10,000 or more pupils (other than the above four) also had fewer applications to available positions. The number of applications also varied regionally, ranging from a high of 17 applications for each position in the Nassau-Suffolk region, to a low of five in the Western region. Therefore, the problem of shortages in certain disciplines is intensified in certain areas of the State by shortages of applications.

Nationwide, nearly 20 percent of entering college freshmen in 1970 planned a career in teaching; by 1982, the proportion had dropped to five percent.

Why has teaching become an unpopular career choice among young people? What can be done to attract able students to teaching careers at all levels, particularly in disciplines where there are shortages? Although there is currently a general oversupply of teachers in the State, it is important to emphasize that there are shortages in certain disciplines and, if the decline in the number of persons obtaining teaching certificates continues, eventually all disciplines will be affected. In addition, many of the teachers now employed in the schools were hired in the 1950's and 60's in order to instruct the large number of baby boom pupils; almost half of all teachers in the State are age 41 or older. These teachers will reach retirement age in the 1980's and 90's. Only three percent of all teachers in New York are under the age of 26. Thus in another five to ten years the rise in retirement rates will further erode the supply of teachers.

One reason given for the drop in available teaching personnel was and is the relative attractiveness of teaching compared to other careers in terms of salaries and working conditions. The choice of teaching as a career currently entails choosing service to students at the sacrifice of being able to earn a competitive salary in today's job market. Further, in the eyes of many college students, teaching ranks low in attractiveness because of such perceived drawbacks as uniformity of curriculum, excessive administrative direction, and heightened public expectation accompanied by shrunken public confidence and support. Teachers are expected to overcome difficult social conditions that do not have their origin in the schools. These conditions include the effects of chemical dependency, the influence of television and video games, and changing moral values. Furthermore, the problem is much more complex than just attracting able students to choose teaching as a career. It is necessary to take steps not only to insure the quality of their training but also to insure the continued updating of their skills.

In its master plan, the State University of New York notes that teacher education has been a major mission of many of its campuses and that, for many years, SUNY has been a major source of teachers. It recognizes that shortages are developing in some disciplines, including mathematics and science. It asserts that it is "too early to determine exactly what kinds of teachers will over the long term be in short supply or to what degree...."

State University perceives the inability to attract academically able students to teaching as a result of forces in society over which higher education has little control. However, SUNY suggests that higher education "contribute to efforts to enhance the image of teaching as a career" and "actively recruit students who would appear to have the aptitude to become good teachers."

Within the independent sector, New York University reported in its master plan that it had established a $100,000 scholarship fund to provide grants of $2,000 per year to excellent students entering, or transferring into, teacher education, as a means of increasing interest in teaching. Syracuse and St. John's indicated that they were seeking to establish similar funds for this purpose. Hofstra University is working with the Nassau-Suffolk BOCES to identify promising high school students, especially for mathematics and science education. To further enhance the attractiveness of teaching as a career, Hofstra and Pace University recommended the establishment of special grant or loan-forgiveness programs; Pace and Sarah Lawrence also urged that teaching conditions and teachers' salaries be improved.

The proprietary sector plan recommends that "the Regents give high priority to the individual development of basic skills for all levels of education" (A.4.), and that "the Regents support career counseling programs focusing upon the improvement of basic skills as fundamental in all career endeavors" (A.5.).

Recent reports, such as that of the National Commission on Excellence in Education, "A Nation at Risk: The Imperative for Educational Reform," have questioned the quality of teacher education as well as that of the students in teacher education programs. "A Nation at Risk" states unequivocally that not enough academically able students are being attracted to teaching and that teacher preparation programs need substantial improvement.

Nationally, some of the methods suggested and solutions being used to deal with these issues are listed below (the 1984 actions by the Legislature are discussed later):

— The New York City Board of Education is paying teachers who are not fully licensed to take courses in mathematics and science.

— In Tennessee, a plan that would create a five-rung ladder for teachers, with pay and other incentives for job performance, has been presented in a special legislative session. In addition, the plan calls for new teacher college standards and more college faculty involvement in in-service teacher training.

— Western Washington University has established a new scholarship fund for students planning to become teachers who have scored in the top ten percent on the Scholastic Aptitude Test or similar examinations.

— In Iowa, scholarships are given as incentives to increase the number of mathematics and science teachers. The scholarships are for those who take at least seven units of mathematics and science in high school.

— Nebraska has set up a program of low-interest loans for prospective mathematics and science teachers who need college aid.

— The California legislature has enacted a loan forgiveness program to prompt students to teach mathematics, science, or another subject in which there is a demand for teachers.

— Pennsylvania has a three-part incentive program for current and prospective mathematics and science teachers. The state will pay for in-service training for current teachers and forgive up to 25 percent of a teacher's student loans for each year in the classroom. Another component is the Scholars in Education Award, which offers grants from $1,500 to one-half tuition for outstanding college students who plan to teach mathematics or science in Pennsylvania's secondary schools.

In a survey conducted by the National Center for Education Statistics, 94 percent of the nation's schools, colleges, or departments of education had implemented one or more measures to improve the quality of teacher candidates during the past five years. The survey was requested by the National Commission on Excellence in Education to provide information from schools of education on the issue of improving teacher education. Some of the measures the survey sought information about included raising the standards for entry into teacher education programs, making the curriculum more rigorous, and extending the program beyond four years. Eighty-five percent of the schools of education reported making the curriculum more rigorous during the last five years, and 74 percent had raised the criteria for entering teacher-education programs.

In the area of admission standards, State University suggests that "criteria should include the probability that an applicant would be able to complete a master's degree....However, care should be taken that the admission process for teacher education programs does not unjustifably exclude persons with academic backgrounds which differ from the traditional." Finally, SUNY notes that its campuses are "examining their recruiting efforts and admissions criteria...."

On the topic of enhancing the quality of teachers, SUNY suggests that consideration should be given to restructuring teacher education programs to incorporate the master's degree level, and a firm undergirding of the arts and sciences disciplines is expected to be an integral part of such programs. It suggests innovative programs to "prepare persons from other fields of work to enter teaching...." Also, "Campuses which have exceptionally good teacher education programs in various certification areas should be identified and strongly supported, and their reputations made known." SUNY notes that "Attention should also be paid to the appropriate education of support personnel who will enhance the effectiveness of good teachers."

In response to the concerns identified, the State University master plan indicates that SUNY is establishing "a task force to examine such issues as admissions requirements for teacher education programs; changes in curricular structure and content; in-service education; educational research; and relationships between campus training programs and New York's K-12 school systems."

The City University master plan cites "the commitment of the University's personnel, training, and research to the problems of public elementary and secondary schooling" as one of the six most important issues to be resolved in the next four years. Under this topic, CUNY discusses its direct collaborative efforts with the public schools in New York City, its campus schools, research center activities, and cooperative activities with other universities in the City.

The master plan notes that 110 of CUNY's 300 master's degree programs are in teacher education. These are characterized as representing "a major commitment of the University's resources to training the teachers and administrative personnel of the City's public schools." However, in relation to teacher education the master plan emphasizes the activities of CUNY's research centers. These activities include "research, dissemination of publications, and curriculum development." Several of them appear to relate principally to in-service education for such purposes as improving bilingual education, training teachers in the use of microcomputers, and improving instruction in the middle grades (for early adolescents).

The master plan says that "During the next four years, the City University hopes to integrate its education research, training, in-service, and outreach efforts into a well-defined program aimed at bettering the quality of public schooling in New York City. The University will assess its capacity to train teachers in sufficient numbers and quality to meet the manpower needs of the New York City public school system."

Syracuse University and St. John's University have increased the amount of classroom experience in their teacher education programs. St. John's has also established a minor in education for students majoring in other disciplines. Rochester Institute of Technology has developed joint programs with the University of Rochester that allow RIT math and science majors to take the University's education courses. Sarah Lawrence College recommended that the teacher education curriculum be improved by emphasizing the liberal arts at the undergraduate level, with education and apprentice teaching at the graduate level. This position also has been taken by Ernest L. Boyer, President of the Carnegie Foundation for the Advancement of Teaching. In other states, the University of New Hampshire has introduced a five-year program that provides a liberal arts education at the undergraduate level, with practical experience in the schools, and professional education study at the graduate level; the University of Miami (Florida) and the University of Tulsa (Oklahoma) have eliminated education as an undergraduate major.

One promising approach to the improvement of the education of teachers is to build on the strengths that already exist in New York's institutions, in order to develop "pinnacles of excellence" in teaching, similar to those represented by the Einstein chairs in the sciences and the Schweitzer chairs in the humanities. The existing Regents Academic Chairs have brought world-renowned scholars to New York's universities; in turn, those scholars have further stimulated research endeavors, excellence in teaching, and intellectual vitality. A similar program in the field of teaching would attract internationally renowned scholars whose presence would strengthen and stimulate the entire educational community of the State.

Following adoption of the Regents Action Plan to Improve Elementary and Secondary Education Results, the Education Department has begun a review of the Regulations of the Commissioner of Education relating to teacher certification. Action is expected in the spring of 1985 on any amendments to those regulations arising from that review.

The University of the State of New York has received a grant from the Mellon Foundation, through the Council of Chief State School Officers, to: 1) promote interest in teaching among able students in elementary, secondary, and postsecondary schools; 2) stimulate activities that will enrich and improve the teaching experience; 3) disseminate information statewide concerning model efforts to enhance the appeal, satisfaction, and quality of teaching; 4) extend visible support to existing structures (regional councils) for school-college collaboration throughout the State; and 5) foster expansion of the cooperative activities of the regional councils beyond the present orientation to teacher supply and demand. These goals are the result of cooperative efforts by Department staff and representatives of schools and colleges throughout the State. While the formation of the regional councils was rooted in the concern about a shortage of teachers in some fields, these councils represent an ideal structure for an expanded effort at communication and working relationships among educational institutions.

The Mellon Project focuses on the interrelated needs to prepare more qualified teachers in certain fields, to promote teaching as a career among bright and able students, and to improve the rewards and successes of teaching. Through the regional councils, the goals noted above, and other cooperative initiatives, will be explored during the next year.

The Regents Action Plan to Improve Elementary and Secondary Education Results has significant implications for the preparation of future teachers and for in-service training for current professional personnel of the schools. As part of that plan, the Regents have proposed that teaching be recognized as a licensed profession. Starting in September 1984, all candidates who are seeking teaching certificates must pass a statewide certification examination. In addition, the Regents propose that all teachers serve a one-year internship prior to receiving certification and that existing teachers and administrators be required to have an annual performance review. The Regents have also proposed that heavy emphasis be placed on in-service education, and have proposed legislation to provide State support for locally conducted in-service education. To provide for new teachers of mathematics, science, occupational education, and second languages, the Regents propose scholarships and fellowships to interest individuals in preparing for teaching careers in these subjects.

In response to several of these Regents proposals, the Legislature included in Chapter 50 of the Laws of 1984 a number of new programs intended to (1) provide student aid for prospective teachers, (2) aid staff development activities of school districts, and (3) provide support for teacher centers that serve as resources for in-service education and computer training.

Chapter 50 established new Empire State scholarship and fellowship programs for prospective teachers of mathematics and the sciences. Effective with the 1984-85 academic year, 312 scholarships will be awarded competitively each year to undergraduates who are enrolled or will enroll full-time in a registered program leading to certification as a teacher of mathematics or the sciences; 26 are available in each of the

State's 12 judicial districts. Each scholarship will provide an award equal to tuition, up to $3,000 per year. Each scholarship winner will be obligated to teach for one year for every two years of aid received. Undergraduates who have not yet begun their junior year are eligible, so some new mathematics and science teachers may be added to the teaching force as early as the 1986-87 school year. By the end of the period of this Plan, there may be over 1,200 Empire State Mathematics and Science Scholarship holders enrolled in New York's teacher education institutions.

A program of 400 Empire State Graduate Fellowships in Mathematics and Science was also established by Chapter 50. Like the undergraduate scholarship program, it is intended to increase the supply of teachers of mathematics and the sciences. The program provides three categories of awards, beginning in 1984-85. (1) Up to 100 fellowships are provided for full-time study in a graduate program leading to permanent certification in mathematics or the sciences for teachers whose positions were abolished in the preceding two years because of enrollment declines. Each such fellowship will provide up to $4,000 for the cost of attendance (tuition and fees, books, transportation, and room and board) for one year of full-time study. The fellowship recipient will be obligated to teach for one school year following completion of study. (2) Up to 100 fellowships are provided for full-time study in M.A.T. or similar graduate programs leading to permanent certification in mathematics and the sciences, under the same terms, for persons who have earned baccalaureate degrees in mathematics, the physical or biological sciences, or engineering and who are not eligible for provisional or permanent certification. They also will be obligated to teach for one school year following completion of study. (3) Not fewer than 200 fellowships are provided for part-time graduate study leading to permanent certification as a teacher of mathematics or the sciences. Each will provide up to $1,000 a year for two years of part-time study. If not all fellowships for full-time study in the first two categories are awarded in a year, the number remaining will be available as additional fellowships for part-time study.

To encourage in-service education of professional school staff, Chapter 50 established two programs. The first includes in aid to the public schools a grant of $20 per pupil to support one day of staff development activities for teachers. To receive the aid, each school district or BOCES must provide one day of staff development activities within the school year, with at least 95 percent of the professional staff participating.

The second program to support in-service education established by Chapter 50 authorizes State grants to school districts, BOCES, or consortia to support Teacher Resource and Computer Training Centers operated by boards composed of a majority of teachers and representatives of business and industry, colleges and universities, and boards of education. The teacher centers will provide professional support services in order to:

- — assist teachers, diagnose learning needs, experiment with the use of multiple instructional approaches, and assess student outcomes;
- — provide demonstration and training sites where teachers are trained in the use of computers as teaching aids and in evaluating computer related materials;
- — develop curricular materials;
- — provide a location where teachers may share resources and ideas related to instruction and become familiar with current teaching materials; and
- — retrain teachers to become better qualified to teach such subjects as mathematics, science, and computer technology.

In the Action Plan, the Regents reiterated the conviction that "the single most important factor for improvement in pupil performance is staff development." During the period of this Plan, the effectiveness of the in-service education programs provided by Chapter 50 will be reviewed; if needed, further steps to assure effective in-service education for teachers will be proposed.

On the topic of in-service education, State University takes the position that higher education cannot and should not have primary responsibility for it, but should provide leadership and cooperate closely with school districts and teacher groups "by making available campus resources to assist in identifying and meeting inservice needs." It says that all campuses that offer teacher education will continue to serve inservice education needs. Faculty and staff would welcome "a more significant role in planning and providing inservice education" than now exists because of "the structure of inservice education in the state as well as the scarce resources in support of their efforts."

Finally, SUNY suggests addressing concerns through cooperation among schools, colleges, and industry.

The City University master plan notes City University's participation with Teachers College, Fordham University, New York University, and St. John's University in the New York Alliance for the Public Schools. Among the programs sponsored by the Alliance, it cites as "the most significant" a two-year training program for all 100 high school principals in the City. The goal of this training is "to give high school principals the information and managerial skills needed to initiate curriculum reform in the schools."

In their master plans, Albany Medical College, Canisius College, Daemen College, New York University, St. John's University, and Syracuse University all noted that they offered in-service education for school personnel. NYU also said that, to further develop in-service activities, it had established joint faculty-school administrators task forces with the White Plains and Oceanside schools. Marist College reported joint in-service education efforts with Vassar College, especially workshops in learning disabilities and behavior disorders. To help the schools to adapt to changes in teaching technology, NYU, St. John's, Canisius, and Yeshiva are offering special courses in technology (such as microcomputers) for teachers. Hofstra and Daemen are planning similar efforts. Several institutions were exploring the development of graduate programs focusing on computer education. Pace University said that it was seeking 30 microcomputers from Apple for a teacher development program in collaboration with the Briarcliff Manor school district.

Implementation of the Regents Action Plan will require actions by postsecondary institutions to provide in-service education for schools staffs and to provide a well-educated supply of new staff members in those fields in which they are now or will be needed.

Actions

To enhance elementary and secondary education, and thus access to postsecondary education, the Regents set forth the following activities to be undertaken by colleges and universities during the period of this Plan:

4-a. **Development or expansion of programs for the education of teachers of mathematics, the physical and biological sciences, foreign languages, occupational education specialties, and special education fields — areas of current or developing teacher shortage. The Regents encourage the establishment of such programs that meet registration standards, particularly Master of Arts in Teaching (M.A.T.) or similar graduate programs.**

4-b. **The enhancement of elementary and secondary schools' support structures — guidan[illegible]s, health services, psychologica[illegible] through the education of certified professionals in these fields and paraprofessionals to assist them. Consideration should be given to the review of existing standards and definitions of responsibilities for paraprofessionals in these support areas.**

4-c. **The fostering, in cooperation with school district leaders, of relationships among colleges, schools, and industries that promote and enhance personnel exchanges and personnel cooperation.**

During the period of this Plan, the Regents and the Department:

4-d. **Will develop a State legislative proposal to establish distinguished chairs in education as a component of the Schweitzer chairs in the humanities, to support excellence in scholarship related to the field of education.**

4-e. **Will encourage colleges, universities, and Teacher Resource and Computer Training Centers to provide in-service activities to foster education for a global perspective, education for civic values, integrating the arts into the curriculum, application of emerging technologies to instruction, development of group dynamics skills, and other areas of special concern that are identified by school districts.**

4-f. **Call on the sectors to join with the Department in a study of the desirability of requiring the master's degree as the entry-level credential for teaching.**

RECOMMENDATIONS

4-g. **The Regents recommend that the Governor propose to the Legislature the establishment of aid programs to attract additional numbers of students to prepare for careers as teachers of foreign languages, of special education, and of occupational education specialties in the schools, areas of current or developing teacher shortage. Such programs might be similar to the recently established Empire State scholarships and fellowships for teachers of mathematics and science.**

Issue 5. Assuring opportunities for adults to return to colleges or universities for study related to civic responsibility, personal growth, or employment.

Between 1980 and the year 2000, the number of persons in New York State between the ages of 15 and 19 will decrease by 25 percent. Over the same period, the total population of the State is projected to increase by three percent. In 1980, there were half again as many 15- to 19-year-old people in New York State as there were persons between the ages of 35 and 39; by 2000, that relationship will be approximately reversed.

The Regents and the Education Department have a long-range plan for adult education. In December 1981, the Goals for Adult Learning Services were adopted by the Regents. The goals statement covered the following eight areas: (1) the public interest in adult learning, (2) the location of learning opportunities, (3) the time of learning, (4) the providers of adult learning, (5) information and guidance services, (6) quality control, (7) assessment of learning outcomes, and (8) financing adult learning. The statement provides a framework for the development of adult learning in the State for the next two decades. Goals 2, 3, 5, and 8 relate specifically to Issue 5, assuring opportunities for adults to return to colleges and universities for study related to civic responsibility, personal growth, or employment.

It is the intention of goal 2 to ensure that learning sites are conveniently located in the community and that they are accessible to persons of all ages. For some adults, whose learning must fit into busy lives and hectic schedules, learning opportunities must be made more flexible, convenient, and diverse. This suggests a need for colleges to offer more programs in a wide variety of locations and settings, for example, in high schools, museums, shopping centers, and work places. New technologies, such as video-discs, computers, and satellite transmission, are promising ways in which to provide information and education to adults where they live and work; they could be potential components of a comprehensive telecommunications system. An increased sharing of learning sites among adult education providers is also an integral part of this goal. A major challenge will be to devise public policies that promote collaboration and resource sharing among these providers. Finally, goal 2 addresses the need for support services, such as day care and counseling, at learning sites. The provision of child care services requires further study. To what extent can certain areas of student service, such as day care, better serve adult students?

Data regarding the attainment of goal 2 are limited, and much more remains to be done. Information on the number of learning sites in each community, numbers of shared sites, availability of support services, and the extent to which the new technologies are being used for learning can provide data on the flexibility and responsiveness of colleges in adapting to the diverse needs of adult students.

The sector master plans provide some information regarding strategies or possible courses of action to achieve flexibility in programs for adults. SUNY, for example, states as a recommendation that "The University will continue to identify and respond to lifelong needs for learning, making use of cooperative arrangements among campuses and with other agencies to provide quality education offerings in the most cost-efficient manner" (#8). According to the State University master plan, all SUNY campuses "offer a variety of credit and non-credit programs in lifelong and continuing education. Employers are making increased use of the University for specialized or technical training and retraining, either on campus or at the work places." SUNY anticipates increased participation by men and women in the work force and by the unemployed preparing for new careers.

In the 1980's, State University will serve greater numbers of part-time and non-traditional students, according to its master plan. Older population groups "are growing both in absolute numbers and relative to the total population. For mature adults, college participation rates have been slowly increasing, commonly on a part-time basis. Thus the 1984 master plan projects increased part-time enrollment at State-operated and community colleges alike." Enrollment-driven formulas, developed in the past primarily to provide classroom instruction for full-time students, are less adequate as part-time students claim increasing shares of the University's resources.

The CUNY master plan points out that hundreds of noncredit courses at 16 CUNY colleges serve thousands of adults each year. Included are noncredit, job-related courses in areas such as real estate, travel and tourism, word processing and computer science, and paralegal studies, as well as courses in the electronic and mechanical fields. All provide technical training to adults who want to upgrade occupational skills. Substantial numbers of continuing education courses are also offered in the area of English as a second language, which serve to integrate new residents of the City into its economy.

Large numbers of mature students participate in CUNY degree programs. The average age of undergraduate students is 26 years. Freshmen average 20 years of age at the senior colleges and 22 at the community colleges. Only 45 percent of freshmen attending CUNY institutions graduated from high school in the year before entering college. Fifty-seven percent of senior college students and 44 percent of community college students are employed while attending college. Consequently, a high percentage of City University students attend on a part-time basis.

According to its consolidated master plan, the proprietary sector has been a leader in developing career education for adults. All proprietary institutions recognize lifelong learning as a traditional goal.

The proprietary sector plan says that, to encourage full-time enrollment, funding will be needed to underwrite a sizable financial aid package that includes tuition reimbursement, a living stipend, and child care. Also, it is imperative that incentives for lifelong learning not be limited to adults enrolled in degree programs. Students and society will benefit directly by the two legislative bills sponsored by the Regents pertaining to part-time TAP and expanded information services. Furthermore, the majority of colleges in this sector strongly recommend State attention to the establishment of day care centers.

In the independent sector, Clarkson, Marist, RIT, and NYU all offer programs specially designed for adult students. Daemen College reported that a special needs assessment had identified community needs for both credit and noncredit study in computer applications, information science, supervisory and personnel management, sales, and business communications. The Academy of Aeronautics intends to offer advanced seminars in specialized aviation technology areas. Canisius College and Pace University provide special support services, including counseling, for adults; Syracuse intends to initiate such services. Both Canisius and RIT reported special financial aid programs for evening or part-time students.

The Regents Goal for Adult Learning Services #3, the time of learning, is closely linked to the issue of access. Many adults find that problems of timing, convenience, and scheduling often block them from further learning. To alleviate these problems, most adults attend part-time. Some colleges have responded to these students' needs by offering courses at convenient and flexible times. Courses are offered in the evenings or on week-ends, or on-site sessions are minimized and combined to save time. Some students participate in learning without leaving home by taking courses via television or correspondence. But there is still much that could be done to make learning more accessible for adults. Educational activities are still scheduled at the convenience of the institution and its staff. For example, adults seeking to complete college degree requirements find few advanced courses offered in evening or week-end sessions; difficulty in conferring with faculty members whose office hours are scheduled during the day, on weekdays, and on campus; and limited access to campus libraries. It is the intent of goal 3 to allow adults maximum freedom in the timing of their educational activities based on their individual needs.

Data are not available on the number of programs offered at times convenient for adult students. Considering that there are more than 15,000 programs registered at New York's degree-granting institutions, it is not unreasonable to assume that, statewide, there are a relatively large number of programs available in the evening. However, this does not address the questions of the geographic distribution of such programs across the State, their distribution across disciplines, or their distribution across levels of study.

Some institutions have revised programs specifically into an evening or weekend format. Statewide, there are 177 such programs registered; 53.8 percent of them are at independent institutions; 38.4 percent are at degree-granting proprietary institutions; 6.8 percent are at State University (including community colleges); and 1.1 percent are at City University. Over 30 percent of these programs are offered by institutions in the western region; 20 percent are offered in the mid-Hudson; the rest are concentrated in the Genesee Valley, New York City, Long Island, and the northeast region. A few are offered in the central region; none in the northern region. Almost 95 percent are undergraduate programs, but there are 12 graduate programs registered in an evening or weekend format; all of them are at independent institutions in the mid-Hudson, central, Long Island, and New York City regions. Of the 165 undergraduate programs, about 25 percent are at the baccalaureate level; 75 percent lead to certificates or associate degrees. In addition, the Regents College Degrees and State University's Empire State College provide great flexibility for adults seeking to earn degrees.

Canisius College, Daemen College, Hofstra University, Marist College, and St. John's University all reported special efforts to provide educational services at times convenient for adults. Clarkson University said that it was investigating the use of "appropriate technology for off-campus instruction." Syracuse University offers external study leading to the M.B.A., M.S.Sc. and M.F.A. degrees. State University's Empire State College also offers external graduate study, leading to the M.A. degree.

Table 11 shows the age distribution of students by level of study. It shows that students over the age of 25 were a majority of all part-time undergraduate, full-time graduate, and part-time graduate students. It also shows growth in the proportions of each of those categories who were over 25. Adults increased from just over 60 percent of all part-time undergraduates in 1979 to almost 63 percent in 1983. At the graduate level, they increased from just over 64 percent of full-time students to almost 69 percent, and from just over 82 percent of part-time students to over 86 percent.

It has been well publicized that postsecondary institutions are facing dramatic enrollment declines in the 1980's as a result of a dramatic decline in the population of 15 to 24 year olds. These enrollment declines are expected to occur mainly at the full-time undergraduate level. According to the Department's projections, the number of high school graduates in New York State is expected to decline by 30 percent between 1982 and 1992. Colleges facing declines in full-time undergraduate enrollments hope to offset some of this expected decline by increasing adult participation, since the State's population aged 25-34 and 35-44 is projected to grow by nine percent and 23 percent, respectively, over the same period (see Table 57, in the chapter on Enrollment Projections, below). In order to determine more precisely the size of the adult pool for higher education, it is necessary to determine the population of adults who have the necessary educational attainment to participate at that level. Table 12 displays the level of educational attainment by age.

Table 11

AGE DISTRIBUTION BY LEVEL OF STUDY
1979, 1981, 1983

	Age						
	Under 20	20-24	25-29	30-34	35-44	45+	
Full-Time Undergraduate							
1979	45.1%	42.7	6.0	3.0	2.2	1.0	100%
1981	43.0%	43.9	6.3	3.2	2.5	1.1	100%
1983	41.6%	44.9	6.5	3.2	2.7	1.1	100%
Part-Time Undergraduate							
1979	10.5%	29.3	20.4	15.8	15.3	8.8	100%
1981	9.5%	28.5	20.4	15.0	16.7	10.0	100%
1983	8.9%	28.4	21.2	14.6	17.5	9.5	100%
Full-Time Graduate							
1979	0.4%	35.1	35.5	15.4	10.0	3.5	100%
1981	1.3%	34.3	32.5	16.1	11.8	3.8	100%
1983	0.1%	31.2	36.4	16.3	12.3	3.9	100%
Part-Time Graduate							
1979	0.1%	18.0	33.0	21.7	18.3	9.1	100%
1981	0.3%	16.5	31.6	21.4	20.8	9.4	100%
1983	0.1%	13.7	31.8	20.7	23.5	10.2	100%

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 12

EDUCATIONAL ATTAINMENT OF ADULTS
NEW YORK STATE AND THE NATION
1940-1982

	Ages 25 and Older							Ages 25-44		
	1940	1950	1960	1970	1978	1981	1982	1978	1981	1982
Percentage of Age Group With 4 Years of High School and 1-3 Years of College										
New York	17.4%	27.2	31.9	40.5	49.8	51.3	51.4	58.2%	58.6	58.5
Nation	19.5%	27.3	33.4	41.8	50.2	52.6	53.3	58.8%	60.4	NA
Percentage of Age Group With 4 or More Years of College										
New York	5.5%	7.4	8.9	11.8	16.2	17.8	19.1	22.1%	24.9	26.0
Nation	4.6%	6.0	7.7	10.7	15.7	17.1	17.7	21.4%	22.5	NA
Percentage of Age Group With At Least 4 Years of High School										
New York	22.9%	34.6	40.8	52.3	66.0	69.0	70.4	80.3%	83.4	84.5
Nation	24.1%	33.3	41.1	52.5	65.9	69.7	71.0	80.2%	82.9	NA

Source: U.S. Bureau of the Census
Census of the Population, 1940, 1950, 1960, and 1970.
Current Population Surveys, 1978, 1981, and 1982 (unpublished).

Table 12 shows the proportion of New York's adult population that has completed at least four years of high school, and the proportion that has completed four or more years of college, according to the decennial censuses and intervening current population sample surveys conducted by the Bureau of the Census. The percentage of New York's population with four or more years of college has exceeded that in the nation as a whole since 1940, and in 1982 stood at almost 20 percent. The proportion with at least four years of high school exceeded 70 percent in New York for the first time in 1982; however, for the first time since 1950, the proportion of the nation's population with at least four years of high school exceeded the proportion in New York State in 1982.

As discussed under Issue 6, below, the Regents Action Plan to Improve Elementary and Secondary Results is expected to alleviate the demand on higher education for remedial assistance for recent New York high school graduates. Some adults, however, will continue to need remedial assistance in order to undertake college-level study. Some of them are persons whose secondary education never was adequate preparation for college-level study. Others have outdated knowledge and "rusty" skills because of the amount of time that has elapsed since completing high school; they too will need remedial assistance in order to regain a level of proficiency adequate for college-level study.

In addition to the problem of timing, two other barriers to learning for adults are lack of information and cost, according to the New York State Continuing Education Needs Assessment Study. Adult Learning Services goals 5 and 8 specifically address these problems. Using these goals as a framework, the Regents developed two bills related to postsecondary education aimed at lowering those barriers. Both bills were included in the 1984-85 State Budget.

The first bill was related to information and guidance services. For 1984-85, the Legislature has appropriated $400,000 to maintain the seven existing Education Information Centers. These Centers help extend access by assisting adult learners in identifying their needs, reaching their goals, and gaining access to learning opportunities. Between 1980 and 1983, the seven EICs served almost 170,000 clients, most of them over the age of 25, at an average cost of only $6.51 per person. Over 20 percent of the persons served were unemployed and seeking employment or additional education or skill development to improve their job prospects. Sixty percent had incomes below $16,000. Primarily, the EIC users were interested in jobs and college or special training programs, but expressed confusion about their futures and difficulty in deciding on career goals. In survey responses, over 90 percent said they found new information at an EIC. Despite this recent initiative, more needs to be accomplished. Most information and guidance services are offered by providers who serve primarily young people. In the 1983 policy statement on "The Role of Education in Support of New York State's Economic Development," with the advice of the Business Council of New York State, the Regents proposed that "The Education Information Centers programs should be expanded so that it would be possible to move to the goal of establishing at least one Education Information Center in each library system." In their 1985-86 budget request, the Regents have included a request for sufficient funds to increase the number of EICs by three.

The purpose of the Regents second bill was to extend eligibility for State student aid to certain half-time undergraduates. This year the Legislature appropriated $11 million for a new program of aid to part-time undergraduates. For a number of years the central issue for government has been whether access to adult learning opportunities should be largely restricted to those who can pay their own way or have employers who will pay for them, or whether access should be more widely open to those who have a need for further education. A review of the sector master plans identified a concern among the sectors that part-time students be allowed access to tuition assistance. According to CUNY, "A program of tuition assistance for part-time students will increase overall attendance and retention in the higher education system, will facilitate adult and continuing education and life-long learning programs, and will encourage the retraining of workers to meet the changing nature of the workplace."

Both of these initiatives place major emphasis on expanding credit-bearing studies. Only the proprietary sector urged that incentives for lifelong learning not be limited to adults enrolled in degree programs.

Actions

Because it is the policy of the Regents that educational services provided to adults should be equal in quality to those provided to traditional college-age students, they set forth the following activities to be undertaken by colleges and universities during the period of this Plan:

5-a. Review of programs intended particularly for nontraditional students to ensure that they meet the same standards of quality the institution maintains in its traditional programs.

5-b. Provision of academic programs and support services at convenient times and in formats appropriate to nontraditional students.

5-c. Collaboration with Education Information Centers to disseminate program information to nontraditional students.

Issue 6: Preparing underprepared applicants for college-level study.

New York State provides significant support for postecondary remedial programs under the auspices of opportunity programs (EOP, HEOP, SEEK, and College Discovery) and through the Supplemental Tuition Assistance Program (STAP) established in 1981. At the same time, the Regents and the school systems are making significant efforts to raise standards of student and school performance at the elementary and secondary levels. The efforts required by the Regents Action Plan to Improve Elementary and Secondary Education Results may reduce the need for remedial assistance for new graduates of New York high schools, but they will not reach adults returning to postsecondary education or immigrants to the State. A number of questions arise with respect to serving different groups just entering postsecondary education and the potential overlap of funding and activities in this area. (See Appendix C for a detailed discussion.)

Remedial and developmental education represents a significant effort at colleges and universities. Most postsecondary institutions test the skills of entering freshmen; City University conducts a system-wide testing and remediation program. At a sample of 37 public, independent, and proprietary institutions in the State, remedial and developmental course registrations accounted for about 5.4 percent of all course registrations in the fall of 1982.

In its master plan, State University says that "Postsecondary institutions will continue to have an appropriate role in remedial and opportunity programs." While commending the Regents goal of strengthening high school graduation requirements and high school retention standards by 1988, SUNY believes that uneven preparation will continue to exist among high school graduates. In addition, SUNY campuses will continue to exhibit diversity in entrance requirements, curricula, and missions, by design. Consequently, the campuses will continue to offer remedial and developmental programs, both for "the new adult constituency" and for "a smaller proportion of recent graduates," as well as for "early leavers" (presumably high school dropouts).

On the subject of enhancing remedial efforts through the use of modern technology, SUNY believes that more general employment of "advanced teaching aids, self-paced study, microcomputers, and similar devices" would be both useful and well received by video-game generations.

The SUNY plan cautions, however, that remedial programs "will function in much the same manner as they now do if postsecondary institutions do not debate seriously the outcomes of their present actions with respect to remediation." On the question of evaluating the effectiveness of remediation, measures suggested by SUNY include a student's progress in subsequent courses, "the extent to which the student transfers the newly acquired abilities to other traditional postsecondary courses," and ultimately, "satisfactory completion of one's program."

The plan states: "SUNY institutions should continue to provide alternative and/or opportunity programs such as Educational Opportunity Centers, Educational Opportunity Programs, pre-college remediation, and early admissions." Suggestions and plans in SUNY's submission include encouragement of "closer ties among professionals at all levels whether through like disciplines, college visits, elementary/secondary school visits, etc.," and modification of teacher education programs to assure that graduates will be equipped to "recognize student differences, address them by varying teaching methods, and strive to bring about success and retention" at precollege levels.

In response to the 1984 Plan Bulletin's request for a statement of what the minimum expectations of entering students' competencies and knowledge should be, SUNY states that because of differences among campuses and curricula, it is better to leave to each campus the judgment of preparedness to enter a particualr course of postsecondary study. SUNY also notes that, even if postsecondary institutions agree upon and describe the expectations of the competencies and subject matter that the high school graduate should possess to undertake postsecondary study, entrance prerequisites will continue to vary (above these minimum standards) by type of institution. Therefore, remedial programs will also vary according to the need to "fill the gap" beyond the minimum competencies.

In its master plan, City University defines its mission in terms of two basic themes: maintaining and expanding its commitment to academic excellence, and providing access to higher education for all who seek it, as "an avenue to economic advancement and personal fulfillment to the citizens of New York City, and, in particular, to the economically and socially disadvantaged among them." In consequence, CUNY identifies basic skills instruction as one of the major issues in its plan. Institutions of higher education throughout the United States recognize inadequate skills of entering freshmen to be a serious problem. While the lack of adequate basic skills transcends place, population, and income level, it is more acute in institutions with open access policies. To indicate the magnitude of this effort, CUNY notes that 68 percent of senior college freshmen and 84 percent of those at community colleges enroll in at least one basic skills course. The Freshman Skills Assessment Program tests all incoming City University students in reading, writing, and mathematics. Students who do not meet CUNY standards are placed in basic skills programs; they must meet the standards in order to enter the upper division. City University regards the basic skills program as central in its effort to improve student retention.

In fulfillment of its mission, CUNY has developed a number of remedial and developmental programs and techniques, such as writing across the curriculum, peer tutoring, and the use of various technologies in instruction. To evaluate this effort, the plan states, CUNY is conducting various follow-up studies of student performance. These studies have led to identification of problems and to plans for such additional efforts as broadened summer programs, expansion of computer-assisted instruction, and intensified instruction in English as a second language. City University reports that in the last ten years the CUNY faculty has published over 600 articles and texts on the teaching of diadvantaged students, and City University's Instructional Resource Center has sponsored and participated in national conferences in remedial and developmental mathematics. Successful campus projects in this area include: developing computer-assisted basic skills instruction, training both full-time and adjunct faculty in the field, and articulating basic writing programs with writing that students must do in other courses. City University has expressed a need for additional funding to support remediation efforts.

Concerning the faculty commitment to basic skills instruction, the CUNY plan notes that the University Faculty Development Program trains tenured faculty in areas of currently diminished student demand to teach in high-demand disciplines, including basic skills areas. Other faculty development projects exist at individual CUNY campuses to train both full-time and adjunct faculty in the methodology of basic skills instruction.

CUNY focuses on articulation with secondary education through a variety of "City University Partnerships," which include "joint programs with the public schools in an effort to improve performance and retention rates of high school students." Some of these are cited under Issue 10, below.

The chief need described by CUNY in relation to this issue is adequate funding. The plan calls for additional funding to train and retrain faculty, implement enhanced use of modern technology in instruction, broaden summer programs for students needing remediation, and support the basic skills effort. The plan ends with a statement of four major "aims," one of which is: "To develop viable student support systems which respond to the unique character of the University's student body." The "support systems" are explained as "services for students who are academically, economically or socially disadvantaged," including "career planning, learning centers, remediation, curricula development, tutoring, summer programs for skills development," and others.

The consolidated master plan for the proprietary sector describes the preparation of underprepared applicants for college-level study as "a long standing concern of the private degree-granting institutions." The plan states: "Strengthening the basic requirements for a high school diploma should provide the performance level necessary for a postsecondary education in New York State." Nevertheless, the plan sees remedial and opportunity programs as continuing to "play an important role in supporting the goals of excellence and access to postsecondary education for the underprepared applicant"; hence, it sees a need for State aid to broaden a "remedial system." The proprietary sector plan recommends that "the Regents give high priority to the individual development of basic skills for all levels of education" (A.4.), and that "the Regents support career counseling programs focusing upon the improvement of basic skills as fundamental in all career endeavors" (A.5.).

According to the plan, a number of proprietary schools have new computer literacy programs and are expanding their use of "computer based learning centers" and software for remedial instruction. Plans in this regard include further acquisition of hardware and software and faculty development workshops.

The plan mentions the following evaluation criteria used by proprietary schools: tracking students' success in subsequent coursework, monitoring individual student performance, and administering standardized tests.

While cautioning that universal standards for admission are not recommended for such a diverse group of institutions, the plan states that most proprietary institutions require entering students to hold a diploma or the equivalent. Most of the institutions are said to agree that "measurable competency in English and mathematics" is necessary equipment; a number recommend "instruction in reasoning, decision-making and logic."

In its recommendations, the Commission on Independent Colleges and Universities addresses the question of how postsecondary institutions could best assist the State's elementary and secondary schools in their efforts to improve students' preparation for college. CICU recommends that the Regents "establish regional educational councils composed of representatives from elementary, secondary and postsecondary levels with business, industry, labor and civic leaders to work together to improve K-12 curricula, and teacher education and teaching conditions to enhance learning at the elementary and secondary levels" (#2).

In the independent sector, St. John's University recommended that students entering college be able to read, write, and speak clearly and coherently; listen, reason, and analyze; do basic computations; and digest and incorporate material presented in class. Canisius College called for them to be able to read at the 12th-grade level; write extended compositions (expository and analytical); use research skills; be capable of literary criticism; understand United States history, culture, and institutions; understand fundamental social science concepts, such as "nationalism" and "culture;" understand the scientific method; understand fundamental concepts in biology, and in chemistry or physics; and have had exposure to non-American culture and history. Daemen College called for competence in reading, writing, quantitative skills, speech and listening skills, problem solving, computer literacy, interpersonal skills, and learning skills. Syracuse University recommended mathematics through algebra, and preferably calculus; English, stressing parts of speech, syntax, idiom, and familiarity with important literary works; one year each of biology, chemistry, physics, and world geography; three years of history, with emphasis on United States history; and the ability to read and speak a foreign language "with substantial ease."

In remedial activities, Rochester Institute of Technology's Learning Development Center offers computer-assisted instruction; noncredit remedial courses, workshops, and seminars; tutorial instruction; and learning laboratories. RIT is developing "computer-video interface" programs in writing and mathematics. Canisius, Daemen, Marist, and Pace all are developing or expanding the use of learning technologies, including microcomputers, computer-assisted instruction, and interactive-video programming for remediation. Syracuse is increasing emphasis on skills instruction, including English as a second language and English composition. St. John's is emphasizing peer teaching and career guidance.

To assist adults who need remediation, Canisius, NYU, and RIT provide testing; NYU, RIT, and Daemen have developed special learning centers or academic support systems for returning adults. Marist offers remedial writing, mathematics, and study skills courses through its School of Adult Education. RIT is considering the establishment of a "vestibule" program for adults who do not meet the entrance requirements of its School of Advanced Industrial Studies.

Six of the independent institutions sampled suggested that student performance in regular academic work was the best way to evaluate the success of remediation; one of them (Canisius) suggested that this include comparison with the performance of students who did not take remedial courses. Four institutions recommended the use of pre- and post-remediation testing. Canisius also suggested that an "effective change in a student's attitude and self-image" was important, and also pointed out that "performance standards should be set in relation to local campus norms."

The Regents believe that to provide remedial and developmental education most effectively, attention is needed in five areas (reviewed in detail in Appendix C). The first is agreement by postsecondary sectors and institutions on a common set of minimum expectations of the knowledge and skills which students should possess to undertake postsecondary study; colleges and universities would remain free to set requirements above the minimum or to admit students who do not meet those expectations. The agreement on such a description of expected competencies and knowledge, and its communication to the schools and the community at large, would give direction to the schools and colleges as they jointly seek to improve the quality of education they provide.

The second area needing attention is the appropriate preparation, credentials, evaluation, and reward system for remedial/developmental faculty. This is a relatively new field, which has developed outside the mainstream of the educational structure. The traditional academic evaluation criteria and the tenure system may not be appropriate for its practitioners. Yet institutions must evaluate and should reward instructional personnel in developmental education.

Third, study is needed to assess the adequacy of resources committed to remedial/developmental education. The roles of secondary and postsecondary institutions and of such other providers as the Educational Opportunity Centers of State University should be studied to improve their articulation.

Fourth, since 1980 Commissioner's Regulations permit credit toward an undergraduate degree to be awarded only for college-level work. Due to the rapid growth of remedial and developmental programs at postsecondary institutions, situations had arisen in which degree credit was being awarded for basic skills instruction. Through the Department's regular academic review process, such instances are being corrected.

Fifth, evaluation of remedial/developmental programs is essential to assure students of quality in the education they receive, to provide institutions with bases for comparison and models for change, and to assure that the public funds which support remedial/developmental education are well spent. Agreement is needed on appropriate evaluation measures and procedures.

In order to address the need to prepare underprepared applicants for college-level study, to enhance the services provided such students, and to address the causes of underpreparation:

Actions

The Regents set forth the following activities to be undertaken by colleges and universities during the period of this Plan:

6-a. To agree upon and describe, by 1986, their expectations of the competencies and subject matter that a high school graduate should possess to undertake postsecondary study. In developing their expectations, postsecondary institutions should take into account the new requirements established by the Regents in the Action Plan to Improve Elementary and Secondary Education Results.

6-b. Application of recent advances in learning technology to the provision of remedial services.

During the period of this Plan, the Regents and the Department will:

6-c. Encourage Teacher Resource and Computer Training Centers to initiate pilot projects to improve articulation between secondary and postsecondary education. Such projects would bring together college faculty who are interested or involved in remedial/developmental education with secondary school faculty and administrators. Pilot activities might include the development of secondary school modules on study skills and time management, and review of modes and techniques of instruction. Successful pilot projects would serve as models for dissemination through the other Teacher Resource and Computer Training Centers.

6-d. Work with the sectors and appropriate individuals and professional organizations in remedial/developmental education to develop, during the period of this Plan, standards for reporting student progress and a broad agreement on appropriate credentials, standards of good practice, and methods for recognizing remedial/developmental faculty effectiveness.

Since 1969, the State-sponsored postsecondary opportunity programs at the City University, the State University, and the independent colleges and universities have provided access, services, and supplemental financial assistance to thousands of economically and educationally disadvantaged students who in most cases would have been denied admission to those institutions without this special intervention.

These programs represent a sizable State investment. In 1984-85, $35 million will support 30,500 students in more than 150 institutions. There is no question that these programs have had a major effect: to date they have graduated more than 25,000 students, and New York's colleges and universities have shown great advances in racial integration, an original objective of the enabling legislation.

Two important questions need to be asked at this stage: Are the opportunity programs cost-effective? What, given current circumstances, should be their future?

The answer to the first question is "Yes." The opportunity programs have assisted educationally disadvantaged students in economically deprived circumstances — predominantly members of minority groups — to enter the mainstream of society. The programs help to break the cycle of welfare dependency. Graduates return to New York far more in taxes than they received as participants in the opportunity programs.

The second question is complex. Clearly, the effectiveness and success of the opportunity programs are strong arguments for additional resources. The opportunity programs represent painfully won gains in behalf of the disadvantaged, and discussion in this area must be prudent, sensitive, and deliberate.

Action

During the period of this Plan, the Regents and the Department will:

6-e. Review, in cooperation with the sectors, the future directions of the State's opportunity programs and prepare, by mid-1986, recommendations to the Governor and the Legislature.

Excellence

New York State is justifiably proud of its excellent system of postsecondary education. Its 250 public, independent, and proprietary institutions provide a wide range of programs and opportunities for the people of our State. The number and diversity of these institutions, which range from major research universities to technical schools, is almost unmatched in the nation.

New York's tradition of high quality postsecondary education has its roots in the powers and authority of the Board of Regents. Established in 1784 as the trustees of Kings College, the Regents have had responsibility for shaping collegiate education in the Empire State for 200 years.

Appropriately, the Regents are the only state board that is recognized by the United States Secretary of Education as a national accrediting body. All institutions that offer degrees in New York must meet the academic standards set by the Board. The Education Department, working closely with New York's colleges and universities, assures adherence to these standards. New Yorkers can proudly claim that there are no diploma mills operating in the State.

For each degree awarded — associate, baccalaureate, master's, or doctorate — a student must earn a minimum number of credits and follow a set distribution of courses prescribed by the Regents. This ensures that each degree designation has a particular meaning in New York. Institutions are not free to award a degree that does not meet these specifications.

The maintenance of quality in our colleges is also assured through the program review process. Each program leading to a degree or certificate must be evaluated and approved by the Commissioner of Education prior to being offered, and periodically thereafter. The process includes a rigorous review by Department staff and faculty and administrators from other colleges and universities.

In addition, the vast majority of New York's postsecondary institutions are also accredited by voluntary accrediting associations, either regional or professional. These reviews, and those of the Regents, build upon an institution's efforts to evaluate itself. Through continuous self-assessment, as required by Commissioner's Regulations, institutions identify their strengths and weaknesses and make necessary corrections before outside agencies conduct their reviews.

For more than a decade, New York has enjoyed a national reputation for its statewide review of doctoral programs. This effort extends to the 42 institutions in New York State which grant doctoral degrees, ensures that the programs offered are of acceptable quality, and has included a review of more than 600 doctoral programs in the arts and sciences and education. The review of nearly 200 programs in the biological sciences is now underway.

Four issues face New York's postsecondary education institutions over at least the next four years as they pursue the goal of Excellence, "To promote and maintain high quality in all endeavors of each institution, whatever its mission, and institutional autonomy within the postsecondary system as a whole":

Issue 7. Preserving the vitality and quality of the liberal arts and sciences along with expanding vocational, professional, and applied programs in a period characterized by high student interest in programs which lead directly to employment and by institutional competition to maintain enrollment.

Issue 8. Maintaining the excellence of graduate and professional programs in a context of increasing costs and competition for resources.

Issue 9. Responding to the need for equipment for instruction and research.

Issue 10. Making more effective use of limited resources by increasing interinstitutional and intersector cooperation, including joint program offerings, regional planning efforts, cooperation between postsecondary and secondary institutions, and shared use of facilities, library resources, and technology resources.

Issue 7. Preserving the vitality and quality of the liberal arts and sciences along with expanding vocational, professional, and applied programs in a period characterized by high student interest in programs which lead directly to employment and by institutional competition to maintain enrollment.

Curriculum Issues in College Preparation

The Regents have set standards in the Action Plan to Improve Elementary and Secondary Education Results which lay the groundwork for maintaining a much stronger pipeline from the elementary through the postsecondary level. The Action Plan includes heightened mathematics, science, social studies, technology, home and career skills, art and music, and second language requirements for pupils. Many of the changes outlined in the plan will take effect in the 1985-86 school year and some will be phased in over a five-year period. The emphasis on mastery of a second language and the increases in the mathematics and science requirements should serve as an impetus for students to pursue study in these fields at the postsecondary level. In addition, the Action Plan requires that all pupils in kindergarten through sixth grade learn the skills necessary to use computers for problem solving. In general, New York's postsecondary institutions' admissions requirements are consistent with the new high school diploma requirements adopted by the Regents. A review of college catalogs indicates that, except in one area, stated admission requirements in many institutions equal or exceed the new requirements for a high school diploma set forth in the Action Plan; that exception is study of a foreign language.

Present requirements for a high school diploma, as set forth in the Regulations of the Commissioner of Education, do not require study of a foreign language for either a local or a Regents high school diploma. The Action Plan calls for a change. All pupils will have at least one unit of instruction in a second language during grades K-9, beginning with the high school graduating class of 1992, and two units beginning with the class of 1994. Beginning with the class of 1989, all high school students pursuing a Regents diploma will be required to pass a Regents examination in a language other than English, except for those taking a five-unit sequence in art, music, or occupational education, for whom that requirement will apply beginning with the class of 1992.

Of New York's 250 public, independent, and proprietary degree-granting institutions, 212 enroll freshmen. Forty-five of the 212, or about one in five, included study of a foreign language as a requirement for admission (others included it among recommended areas of prior preparation), according to a review of catalogs and the State University of New York's "Profiles, 1984-85" of campuses. The 45 institutions included four State University campuses, one City University senior college, and 40 independent four-year colleges. Twenty-five of the 45 required two units of foreign language; three required two or three units; eight, three units; and two, three or four units; seven did not specify the number required.

In the fall of 1983, the 212 institutions enrolled over 158,000 full-time, first-time students; about 136,100, or 86 percent, were residents of New York State. However, the 45 institutions that included prior study of a foreign language as an admission requirement enrolled only some 22,700 full-time, first-time freshman who were New York residents, or less than 17 percent of all full-time, first-time students from New York.

The Regents believe it important that elementary and high school students learn a second language because it will assist them in understanding other cultures, foreign and domestic, and lead to more knowledgeable exercise of the duties of citizens in a democracy. Further, because of the growing interrelationship between this nation's economy and those of other countries, the Regents believe it important for members of the work force to communicate with speakers of languages other than English. For the same reasons, there should be concern about foreign language requirements for admission to college.

Actions

The Regents set forth the following activities to be undertaken by colleges and universities during the period of this Plan:

7-a. To consider requiring study of a language in addition to English for admission, by 1990.

Curriculum Issues in Two-Year Colleges

In 1970, 200,218 full-time and part-time students were enrolled in New York's community and other two-year colleges. The enrollment in 1982 was 295,797, an increase of 47.7 percent; they constituted 36 percent of all undergraduates in the State. Nationwide, enrollment in community colleges in the fall of 1982 exceeded five million students; the number in New York was 223,850. It is important, however, to note that New York's community colleges cannot be categorically compared with community colleges in the rest of the nation. While most community colleges and two-year institutions in this country were founded as primarily "transfer" schools, the original mission of six of the oldest of New York's community colleges was to provide postsecondary occupational education; the transfer aspect of their mission was a later development. Indeed, these six community colleges were not authorized to provide general education until enactment of Chapter 828 of the Laws of 1957. Recent national studies report that less than 40 percent of students now enrolled at community colleges are in transfer programs, and fewer than one student in ten will eventually transfer to four-year schools. However, in New York State in 1980, 30 percent of all those receiving associate degrees transferred to four-year institutions in-State, making the ratio approximately 1 out of 3.3 transferring in-state. By 1982, the ratio had increased to 1 out of 3.

There has been a shift in the areas of degrees conferred and enrollment patterns, however. Table 13 shows, by subject area, associate degrees conferred for 1976-77 and 1981-82, and degree credit enrollment in those subject areas (including such programs offered by four-year institutions). In addition, the table shows percent changes in degrees and enrollment between those years. Although the usual assumption is that students in liberal arts programs or in programs leading to A.A. or A.S. degrees constitute "transfer students," students receiving A.A.S. or A.O.S. degrees or degrees in occupational areas also transfer, in unknown numbers. Eighty-five percent of all the associate degree programs in the State are in occupational subjects or lead to A.A.S. or A.O.S. degrees; only 15 percent lead to A.A. or A.S. degrees in the prebaccalaureate liberal arts and sciences. In addition, transfer data available at this time do not include students who delay transfer to a four-year institution for a year or more after receipt of the associate degree.

Despite data limitations, the information in Table 13 suggests some conclusions. Perhaps the community and two-year colleges reflect the status of the nation's economy to an even greater degree than four-year institutions. The unemployment rate for four-year graduates rose between 1969 and 1978, and the impact was more pronounced for the traditional liberal arts graduate than for those in "career oriented" fields. In addition, "salaries paid to four-year graduates did not keep pace with inflation because of the glut of graduates in the 1970's," according to Robert Baron, writing in the Winter 1984 issue of "Educational Record." These factors also had a demonstrable effect on community college students. In 1970, 18 percent of the entering two-year students in the country said they wanted to study the humanities or social sciences; only nine percent indicated this intention in 1979. Although enrollment in two-year liberal arts and sciences programs in New York rose by 11 percent between 1976-77 and 1981-82, the number of arts and sciences associate degrees granted in this period declined 26 percent. In times of economic uncertainty, students opt for a degree which will get them into the job market as soon as possible. For example, enrollment in data processing programs in New York increased 239 percent between 1976 and 1981, and the number of associate degrees awarded in that field increased 142 percent. Another area in which both degrees and enrollments increased was business and commerce technologies (degrees up 34.2 percent, enrollment up 30.5 percent, between 1976 and 1981).

New York's public two-year colleges (community colleges, agricultural and technical colleges, and New York City Technical College) enrolled 261,977 students in the fall of 1982, 88.6 percent of all the two-year college students in the State and 61.6 percent of all undergraduates in the public sector that year. Based on data from the "New York State Accountability Report for the Administration of Occupational Education under the Vocational Education Amendments of 1976 for Federal Fiscal Year 1983," 154,264, or 58.9 percent, were enrolled in occupational programs. New York's public two-year colleges were the third largest providers of occupational education that year, after the "Big 5" city school districts and programs provided directly by local educational agencies.

A majority of the students in occupational programs in public two-year colleges were preparing for careers in business and office or marketing and distribution fields (52.4 percent). The next largest numbers were preparing for careers in technical occupations (16.2 percent) and health fields (16.1 percent).

New York's public two-year colleges reported that 29,692 students completed occupational education programs leading to certificates or associate degrees in 1982. Employment data were available on 24,698; 65 percent of that number were reported to be employed; a further 25 percent were reported to be continuing their educations. Only seven percent were reported to be unemployed and seeking employment.

As institutions whose mission is to be responsive to community needs, community colleges tailor their curricula to meet those needs. The consistent increase in their enrollments over the last decade is just one indication of how well "people's colleges" have met those needs. Community colleges have not only vigorously survived, they have adapted to advances in technology that have altered students' as well as other adults' educational goals and needs in a time of economic uncertainty. Community colleges, in serving the needs of the "community," offer many programs in addition to the traditional fare, and interest generated from taking one or two continuing education courses often leads an individual to enroll in a degree program. In addition, growth in their occupationally oriented curricula reflects the growing role of community colleges in local and regional development, especially regarding "high tech" fields. New York's higher education system has a need to provide every opportunity for these constituencies to extend their education to the baccalaureate level.

Increasing the number of students who transfer into four-year institutions from two-year schools is one of the objectives the Regents set for 1990 in the 1980 Plan. The Governor accepted this objective. Although, for ten years, both State University and City Univer-

Table 13

ASSOCIATE DEGREES CONFERRED IN 1976-77 AND 1981-82 AND DEGREE CREDIT ENROLLMENT IN LOWER DIVISION FIELDS

Subject Area Degrees and Enrollment	1976-77	1981-82	% Change
Data Processing Technologies	965 + (5,936) o	2,336 (19,418)	+142.0 (+239.1)
Business & Commerce Technologies	14,123 (68,365)	18,951 (89,190)	+34.2 (+30.5)
Mechanical & Engineering Technologies	4,760 (23,017)	4,974 (28,792)	+4.5 (+25.1)
Natural Sciences Technologies	3,192 (8,048)	2,918 (8,232)	-8.6 (+2.3)
Health Services & Paramedical Technologies	7,059	5,932	-16.0
Liberal Arts	14,486 (70,338)	10,724 (78,078)	-26.0 (+11.0)
Public Service-Related Technologies	4,660 (16,938)	3,200 (15,315)	-31.3 (-9.6)

+ Degrees granted
o Total Enrollment for first and second year students including part-time

Source: NYSED, Office of Postsecondary Policy Analysis, 1984.

sity have had policies intended to facilitate transfer from two-year campuses to four-year campuses; although many two-year and four-year institutions have articulation agreements; and although the transfer rate in New York is higher than the national rate, further attention needs to be given to ensuring that transfer students are not unduly penalized through disallowance of credits earned at the associate degree level and that two-year college students receive adequate guidance on transfer requirements. Particular concern for this issue is evidenced in the City University master plan. City University is undertaking to develop, with aid from the Ford Foundation, a comprehensive listing of course equivalencies in the CUNY system. The goal is the systematic evaluation of all community college courses by the senior colleges, resulting in a reduction of unnecessary duplication of course work at the senior colleges, and in the amount of time required to earn a baccalaureate degree.

Curriculum Issues at the Baccalaureate Level

As student demand for academic programs has moved increasingly toward those which are most closely linked with employment opportunities, it has become apparent that the liberal arts are, in some institutions, relegated to a support or secondary role. Indeed, some in higher education have characterized the liberal arts as an endangered species. Currently, almost 60 percent of the baccalaureate programs in the State lead to B.A., or B.S. degrees in the traditional liberal arts and sciences. However, as enrollments decline in these areas, and demand increases in vocationally related programs, institutions have little choice but to realiocate their resources to follow student demand. The threat to the vitality of the liberal arts is clearly not one of extinction but diminution. Indeed, some educators caution that the greatest threat to the liberal arts appears to be not dissolution but transformation. Verne Stadtman, of the Carnegie Foundation for the Advancement of Teaching, reported in his study, "Academic Adaptations" (Jossey-Bass, 1980), that there has been a significant trend toward liberal arts colleges becoming comprehensive institutions. He observed that students were moving away from liberal arts programs into vocational, preprofessional, and professional programs and cautioned against the potential failure of liberal arts colleges, noting that "liberal arts cannot be served in the special way that is possible when they are virtually the exclusive concern of an institution. . . .It is for this reason that the conversion of liberal arts institutions into comprehensive institutions primarily engaged in vocational and occupational programs is saddening."

There is substantial evidence that student interest in obtaining degrees in the liberal arts has decreased over the last decade (see Table 14). As may be seen in Table 15, in the fall of 1971, 33 percent of all full-time undergraduates in New York were enrolled in liberal arts and science programs; by 1982, the proportion had dropped to less than 27 percent. The concern is not only that the liberal arts are being submerged by more technological fields within comprehensive universities and colleges but that traditional liberal arts colleges are closing at an alarming rate. In 1971 the Carnegie Commission on Higher Education identified 721 institutions as liberal arts colleges in the United States. By 1976 the number was 583; a reduction of almost 20 percent in five years. Between 1974 and 1984, eight colleges which could be identified as "liberal arts" institutions closed in New York State. The practical advantages of a college education, that is, the increased earning capacity which comes with the conferral of a degree, have caused an understandable emphasis on the occupational purposes of postsecondary education. Unfortunately, this emphasis has begun to obscure those other purposes of higher education which not only serve employment purposes but also enhance the quality of the individual's life and that of the community in which she or he resides. The study of the liberal arts develops within its students the capacity to analyze, create, innovate, and communicate. These qualities, while perhaps not apparent on a job resume, certainly have value for employers. Beyond this, however, these very qualities can be turned to the improvement of the social welfare and the enhancement of our cultural lives. The value of a liberal arts education extends beyond personal vocational interests to the society itself.

It is clearly in the best interest of society to preserve and promote the study of the liberal arts. The evidence strongly indicates that these disciplines must receive special attention and protection in a period in which higher education is moving increasingly into occupationally oriented fields. Not only must colleges and universities endeavor to provide a quality liberal arts education for those students who major in occupational or technical areas, but those struggling institutions which strive to maintain the liberal arts as their primary focus must be assisted in their goal.

In their master plans, institutions and the sectors addressed the issue of preserving the vitality and quality of the liberal arts. According to the State University master plan, there has been considerable discussion about maintaining the quality of liberal arts education in the face of the trend favoring vocationally oriented programs. There is no clear agreement on what constitutes a liberal arts education. Faculty over-

Table 14

BACHELOR'S DEGREES AWARDED AND TOTAL UPPER-DIVISION ENROLLMENT FOR SELECTED HEGIS AREAS

1970-71, 1975-76, 1981-82

Subject Areas Degrees and Enrollment	1970-71	1975-76	1981-82	% Change 81-82/70-71
Computer & Information Sciences	240 + (745)o	702 (2,206)	2,314 (6,751)	+864.2 (+782.0)
Communications	542 (1,716)	1,641 (3,354)	2,830 (5,937)	+422.1 (+246.0)
Engineering	3,989 (11,168)	3,976 (9,915)	5,993 (15,005)	+50.2 (+34.4)
Social Sciences	15,549 (32,696)	14,221 (27,152)	12,100 (22,363)	-22.1 (-31.6)
Education	10,255 (22,339)	10,007 (18,964)	5,322 (11,658)	-48.1 (-47.8)
Foreign Languages	2,567 (5,538)	1,928 (3,645)	1,070 (1,968)	-58.3 (-64.5)
Mathematics	2,771 (6,377)	1,641 (3,725)	1,119 (2,556)	-59.6 (-59.9)

+ Degrees granted.
o Upper-division degree credit enrollment including part-time.

Source: NYSED, Office of Postsecondary Policy Analysis, 1984.

Table 15

FULL-TIME UPPER-DIVISION UNDERGRADUATE ENROLLMENT IN LIBERAL ARTS PROGRAMS AND OCCUPATIONALLY ORIENTED PROGRAMS BY TWO-DIGIT HEGIS CODE

Fall 1971 and Fall 1982

Programs in:	1971	% of Total	1982	% of Total	% Chge. 1971-82
Liberal Arts and Sciences - Total	47,582	33.1%	40,257	26.5%	-15.4%
Area Studies	485	.3%	450	.3%	-7.2%
Biological Sciences	7,662	5.3%	7,214	4.7%	-5.8%
Fine and Applied Arts	8,607	6.0%	9,960	6.5%	+15.7%
Foreign Languages	3,940	2.7%	1,576	1.0%	-60.0%
Letters	14,658	10.2%	7,765	5.1%	-47.0%
Mathematics	5,487	3.8%	2,565	1.7%	-53.3%
Physical Sciences	4,565	3.2%	4,025	2.6%	-11.8%
Interdisciplinary	2,178	1.5%	6,702	4.4%	+207.7%
Occupationally Oriented Fields - Total	96,248	66.9%	111,823	73.5%	+16.2%
Agriculture & Natural Resources	1,062	.7%	1,176	.8%	+10.7%
Architecture & Environ. Design	1,574	1.1%	2,785	1.8%	+76.9%
Business and Management	13,349	9.3%	30,954	20.4%	+131.9%
Communications	1,355	.9%	5,689	3.7%	+319.9%
Computer & Information Sciences	851	.6%	6,474	4.3%	+660.8%
Education	21,155	14.7%	9,504	9.3%	-55.1%
Engineering	8,701	6.0%	14,111	6.2%	+62.2%
Health Professions	6,486	4.5%	9,906	1.1%	+52.7%
Home Economics	1,268	.9%	1,702	6.5%	+34.2%
Law	57	.04%	40	.02%	-29.8%
Library Science	25	.02%	0	0	-100.0%
Military Science	46	.03%	0	0	-100.0%
Psychology	10,821	7.5%	7,498	4.9%	-30.7%
Public Affairs & Services	1,142	.8%	3,857	2.5%	+237.7%
Social Sciences	27,931	19.4%	18,037	11.9%	-35.4%
Theology	425	.3%	90	.06%	-78.8%
TOTAL[1]	143,830	100.0%	152,080	100.0%	+5.7%

[1] Total excludes enrollment categorized "other."

Source: NYSED, Information Center on Education. College and University Admissions and Enrollment, New York State, Fall 1971; College and University Admissions and Enrollment, New York State, Fall 1982.

sight, peer review, and collection of student opinion regarding courses offered within a liberal arts curriculum can provide assurance of quality; no specific standards are required. However, State University points out, a careful review of recent reports from national deliberative bodies suggests that there are some overall values or characteristics that can be associated with the concept of a liberal education (for example, exposure to world cultures, and ability to engage critically and constructively in the exchange of ideas). A set of statements to guide institutions in the construction and evaluation of liberal arts programs might be useful, according to State University; there should be no specific designation of content or courses to be included in a core curriculum, since many disciplines can provide exposure to the kinds of concerns most generally associated with a liberal arts education. A campus should determine its own approach to providing a liberal arts education shaped by its own faculty and the disciplines represented on the campus.

State University encourages its campuses to examine periodically the general education components of their respective programs. An evaluation procedure is currently in place to assess the results of curricular reform. Many SUNY campuses have changed or are in the process of redefining and revising general education goals. In some instances new patterns of required courses have been established. For example, to make certain graduates have communication skills, colleges are instituting coursework in remedial education and administering examinations on writing and speaking. Regional conferences on the topic of general education requirements have taken place, including a 1983 Conference on Basic Skills at SUC Cortland and a 1984 Conference on Science, Technology, and the "New Liberal Arts" at SUNY Albany. Several SUNY two-year campuses are represented in the Community College General Education Association.

There appears to be a resurgence of interest in foreign languages, generally as part of a liberal education. This is evident on SUNY campuses. The number of students who complete a sequence of courses in at least one foreign language is increasing and there is escalating pressure on campuses to provide more instruction in language. However, it is not generally accepted that a foreign language requirement should be instituted either for entrance to postsecondary education or for completion of a degree; rather, study of a foreign language should be strongly encouraged, according to State University.

In their consolidated master plan, the proprietary institutions suggest that the liberal arts tradition may require temporary support in the form of a core curriculum by each individual college or university. An established core program could then be augmented by courses relating directly to employment. The issue of maintaining quality in the liberal arts is not necessarily related to the missions of proprietary institutions which offer occupationally oriented programs. Institutions in the proprietary sector do not have a foreign language requirement for admission or graduation. At this time, the majority of institutions are primarily concerned with the development of skills in English.

According to its master plan, "City University recognizes that its graduates are likely to pursue additional education, and that more students are enrolled in professionally oriented programs than before. In the next four years, the University plans to respond to these trends by adjusting its programs in two principal ways. The first is to provide professional training where it is needed and desired. The second is to enhance the role of liberal arts and sciences in the curricula to insure that all students, especially those in preprofessional and professional programs, receive a strong, traditional and balanced education." It is expected that all new associate degree programs will stress the liberal arts as well as career-related skills. In the case of A.A.S. programs which are primarily designed for students seeking professional employment immediately upon graduation, City University will encourage the development of transfer tracks for students who decide, at some point during their pursuit of the A.A.S., to complete a baccalaureate degree program before entering the work force.

"Liberal studies remain central to the purpose of baccalaureate education at the City University. The period of the last four years has witnessed a resurgence in and a re-evaluation of liberal learning at each of the senior colleges. The successes of the University's colleges in designing core curricula and new distribution requirements have been the subject of national interest and have spurred curricular reform at other institutions." One of the most notable additions to the University's liberal arts programs at the baccalaureate level is the Worker Education Program, designed to provide working adults with access to a highly innovative and intellectually challenging series of interdisciplinary courses in liberal studies. Also of note is the University's effort to add a multicultural dimension to its program of study. This effort may take the form of required courses in non-Western cultures that form part of senior college core curricula and distribution requirements; it may also be represented by the initiation of new degree programs. Examples of the latter include Caribbean Studies, International Studies, and Black and Puerto Rican Studies.

Seven of the 14 independent institutional master plans sampled reported plans to add, or revise, a core curriculum. Several are planning to add, or to increase, required foreign language study for graduation. Three indicated plans to introduce additional foreign languages as major subjects, including Chinese and Japanese. Several urged that New York provide scholarships for language majors or fund various aspects of language program development such as exchange programs or language laboratory equipment. Canisius College said it believed that a statewide language requirement for a baccalaureate degree should be considered.

The Commission on Independent Colleges and Universities points out the potential of computer technology to aid "elementary, secondary and postsecondary curricular architects." CICU recommends that the Regents and the Education Department "help colleges and universities transform the results of campus research and institutional studies to assist with the revision of curricula in the arts and humanities, integrated with alternate instruction techniques including the use of computer technology" (#3). Regarding international education, CICU states its belief that "higher education has a basic responsibility to ensure that future graduates are able to deal with the dynamics of...world interdependence," and recommends: "The Regents should vigorously pursue the development of expanded international education programs as recommended in their 1984 Postsecondary Master Planning bulletin" (#26).

The Regents have pointed out that America's general ignorance of foreign cultures "affects our very survival as a Nation." The section of this chapter, above, [illegible]n "Curriculum Issues in College Preparation," reviewed the actions the Regents have taken to strengthen the study of foreign languages in the elementary and secondary schools, and the need for colleges to consider adopting a requirement of prior study of a foreign language for admission. Such steps only partially address the problem of enhancing international understanding, however.

At a time when America's fortunes are inextricably linked with those of the rest of the world, language studies, area studies, and student and faculty exchange programs are vitally important. However, according to the Institute for International Education, a decade of growth in the number of foreign students studying in the United States appears to have ended. The number of foreign students enrolled in American colleges and universities in 1983-84, 338,890, was only 0.6 percent greater than the number enrolled in 1982-83, according to the Institute. The number of students from several areas of the world declined between 1982-83 and 1983-84: from African countires, down 2.3 percent; from Latin America, down 7.9 percent; from the Middle Eas[illegible]wn 9.8 percent.

There were some 29,200 foreign students enrolled at New York's colleges and universities in 1983-84, about 8.6 percent of all the foreign students in the nation. Fifty-nine percent were attending independent institutions; some 22 percent were at State University campuses; 18 percent were at City University; less than one percent at proprietary degree-granting institutions.

Seventy-five colleges and universities in the nation each enrolled more more than 1,000 foreign students in 1983-84; nine of them were in New York: City College; Columbia University, Barnard College, and Teachers College (combined); Cornell University; New York University; SUNY Buffalo; SUNY Stony Brook; and Syracuse University. Together, they accounted for almost 11,400 foreign students, 39 percent of all the foreign students in the State and some three percent of the total number studying in the United States.

Almost two out of three foreign students in the nation are studying at the undergraduate level; some 35 percent were enrolled in graduate programs. In New York, almost 60 percent are undergraduates; slightly more than 40 percent are studying at the graduate level. Only about one out of three foreign students in the United States received financial aid from their own governments, the colleges they were attending, or through Federal student exchange programs.

SUNY offers numerous international education programs at nondegree, undergraduate, and graduate levels, including opportunities for American students to study abroad. The master plan notes that the University has been a leader in student and faculty exchange, notably with the Soviet Union, and increasingly now with the People's Republic of China. The range of exchange programs will expand, engaging more students and faculty in the world scholarship network and opening doors to research opportunities overseas. Several SUNY community colleges are on the forefront of international programming at the two-year level. One campus operates a substantial study abroad program; one organized a series of successful lectures on international topics, aided by the U.S. State Department and involving both the campus and its surrounding communities; several others offer special programs and training institutes for foreign students. State University will continue to encourage its community colleges to expand international exchange, study abroad, foreign student enrollment, and technical assistance projects.

City University has fostered the development of centers and institutes that promote the study of the ethnic cultures its students represent: the senior colleges now sponsor an African Studies and Research Institute, a Center for Italian American Studies, an Institute for Puerto Rican Studies, Centers for Jewish Studies, an Institute for Studies in American Music, a

Center for International Services, and a Center for Byzantine and Modern Greek Studies.

Improvement of programs to provide international understanding must be addressed at the institutional, State, and Federal levels.

The Regents set forth the following activities to be undertaken by colleges and universities during the period of this Plan:

7-b. To establish, strengthen, and expand language studies, area studies, studies of international commerce, student and faculty exchange programs with foreign universities, and courses and other learning activities in other disciplines to enhance the understanding of foreign cultures.

7-c. To include in their efforts to assure the excellence of their academic endeavors the following elements, as appropriate, in order to assure that every student's postsecondary education is both liberal and humane, in the broadest sense, and one that develops the student's scientific and technological literacy:

i. at each institution that offers study in the liberal arts and sciences, maintenance of strong liberal arts programs;

ii. at each professional school, programs that assume and build upon a prior liberal arts and sciences education and that assure advanced education that is liberal and humane as well as provides professional competence;

iii. at each highly specialized degree-granting institution, education that provides liberal and humane experiences for the students as well as up-to-date technical competence.

In each sector, institutions have taken steps already to respond to this issue. In their 1986 progress reports, the Regents will ask each sector to select exemplary institutional responses and report on those institutions' experiences.

7-d. To join with the Regents in urging the Congress to expand and reauthorize the International and Foreign Language Studies programs in Title VI of the Higher Education Act, and to increase funding for international exchanges through such programs as the Fulbright and Fulbright-Hayes programs, International Visitors Program, and the Eisenhower and Humphrey fellowships.

7-e. To join the Regents and the Department in developing proposals for State programs that would increase international understanding and educational opportunities, particularly for residents of third world nations, by encouraging enrollment of foreign students in colleges and universities in all sectors in New York. Such programs must assure that enrollment of foreign students will not reduce opportunities for New Yorkers.

Issue 8. Maintaining the excellence of graduate and professional programs in a context of increasing costs and competition for resources.

There were over one million graduate students in the United States in 1982. Of that number, 16.5 percent (165,378) were enrolled at New York institutions. Over 70 percent of New York's graduate and first-professional degree students were at independent institutions; almost 20 percent were at State University campuses; over 10 percent were at City University. This section will present a brief look at trends in master's and doctoral programs in the State as well as a look at the status of graduate education nationwide.

The trend in degrees granted and enrollment for master's degrees in New York is similar to that for baccalaureate degrees. Table 16 shows that between 1970-71 and 1981-82 the number of master's degrees granted in computer science increased by 313 percent, and enrollment increased by 32 percent. Communications also had increases in degrees and enrollments of 103 and 130 percent. Education, engineering, mathematics, social sciences, and foreign languages experienced decreases in both indicators. Doctoral degrees showed much the same trend (see Table 17). Communications and computer science doctoral degrees and enrollments increased by 366 and 174 percent and 36 and 86 percent, respectively, over a ten-year period. The following fields had percent decreases in both doctorates and enrollments: education, -11.8 (degrees), −6.7 (enrollment); foreign languages -15.7 (degrees), −48.0 (enrollment); social sciences -20.7 (degrees), −1.2 enrollment); engineering -26.8 (degrees), −35.4 (enrollment); and mathematics -35.0 (degrees), −12.3 (enrollments).

Table 16

MASTER'S DEGREES CONFERRED AND ENROLLMENT IN MASTER'S DEGREE PROGRAMS FOR SELECTED HEGIS AREAS
1970-71, 1975-76, 1981-82

Subject Areas Degrees and Enrollment	1970-71	1975-76	1981-82	% Change 81-82/70-71
Computer & Information Sciences	149+ (1,926)o	302 (1,072)	616 (2,553)	+313.4 (+32.6)
Communications	295 (595)	459 (1,072)	600 (1,372)	+103.4 (+130.6)
Engineering	2,142 (5,696)	1,747 (4,579)	1,999 (4,098)	-6.7 (-28.1)
Education	11,148 (33,950)	15,557 (34,316)	8,569 (18,745)	-23.1 (-44.8)
Social Sciences	2,187 (6,079)	2,014 (4,852)	1,623 (3,865)	-25.8 (-36.4)
Mathematics	674 (1,398)	658 (1,233)	355 (539)	-47.3 (-61.4)
Foreign Languages	657 (1,738)	671 (1,257)	336 (719)	-48.9 (-58.6)

+ Degrees granted
o Enrollment in master's degree program including part-time.

Source: NYSED, Office of Postsecondary Policy Analysis, 1984.

Table 17

DOCTORAL DEGREES CONFERRED AND ENROLLMENT IN DOCTORAL DEGREE PROGRAMS FOR SELECTED HEGIS AREAS
1970-71, 1975-76, 1981-82

Subject Areas Degrees and Enrollment	1970-71	1975-76	1981-82	% Change 81-82/70-71
Communications	6+	11	28	+366.7
	(51)°	(81)	(140)	(+174.5)
Computer & Information Sciences	19	26	26	+36.8
	(207)	(329)	(386)	(+86.4)
Education	609	662	537	-11.8
	(4,642)	(5,537)	(4,322)	(-6.7)
Foreign Languages	102	136	86	-15.7
	(1,333)	(1,051)	(693)	(-48.0)
Social Sciences	468	494	371	-20.7
	(4,005)	(4,643)	(3,955)	(-1.2)
Engineering	354	273	259	-26.8
	(2,810)	(1,522)	(1,816)	(-35.4)
Mathematics	140	107	91	-35.0
	(934)	(1,001)	(819)	(-12.3)

+Degrees granted.
°Enrollment in doctoral degree program including part-time.

Source: NYSED, Office of Postsecondary Policy Analysis, 1984.

As at all other levels of study, the uncertainty of employment opportunities after completing a graduate degree affects a student's choice of field as well as his or her decision on what level of degree to complete. The Bureau of Labor Statistics of the U.S. Department of Labor, for example, projects that among those occupations for which graduate education is appropriate, the following will experience the largest number of new jobs, or the largest percentage increase in jobs, by 1995: in the health professions — registered nurses, physicians, chiropractors, veterinarians, speech pathologists, and dentists; in technical careers — electrical engineers, mechanical engineers, computer system analysts, and computer programmers; in education — kindergarten and elementary school teachers; and in other professional career areas — architects, lawyers, accountants, and managers. Further, reductions in Federal student support programs, especially at the graduate level, have coincided with dramatic increases in tuition costs. Between 1969 and 1981 graduate tuition and fees more than tripled in this country. In addition, private institutions nationwide raised their tuition and fees nearly five-fold.

Related to uncertainty over employment has been an increase in the proportion of new doctoral recipients entering the U.S. labor force who seek postdoctoral study rather than employment. According to the National Research Council, the number of new doctoral recipients (across all disciplines) seeking postdoctoral study has increased from 13-15 percent in the early 1970's to 18-20 percent in the early 80's. In some disciplinary areas, the proportion is far higher. Postdoctoral study (such as a fellowship, traineeship, or research associate position), rather than employment, was sought by over 41 percent of the 1982-83 recipients of doctorates in chemistry, 47 percent in physics and astronomy, and almost 60 percent in the biological and health sciences. The NRC commented (in its "Summary Report 1983 Doctorate Recipients from United States Universities") that, "Perhaps in physics, as in chemistry and the biological sciences, a new career pattern has emerged, whereby a postdoctoral study appointment has become the first step on the ladder to a faculty position."

The December 1983 report by the National Commission on Student Financial Assistance, "Signs of Trouble and Erosion: A Report on Graduate Education in America," addresses many different aspects of graduate education. The report noted that Federal support for fellowships and research assistantships has fallen. Stipends that numbered 80,000 in 1969 declined to approximately 40,000 in 1983. The Commission stated that graduate training is ultimately connected to research and that it is not possible to reduce support for students without affecting the basic research endeavor. The cutbacks in student aid are a major factor not only in declining enrollments but in the area and level of advanced degree a student chooses. Undergraduates are enrolling in programs such as medicine and law because they know that their investment of time, energy, and money will be returned when they begin their careers.

The five main problem areas outlined by the Commission are:

- Shortages of highly trained talent in key fields, such as area studies and foreign languages as well as computer science and engineering.
- Maintenance of a faculty of highly trained talent.
- Loss of talented students (especially women and members of minority groups).
- Deterioration of the infrastructure that supports graduate research and training.
- The potential loss of a generation of scholars, particularly in the humanities and social sciences.

The report also points out that Federal support for research has declined dramatically since the late 1960's. Specifically,

- Between 1967 and the mid-1970's, basic research support from the Department of Defense dropped nearly 50 percent in real dollars, from $1.5 billion to $600 million.
- The combined civilian research and development expenditures of France, West Germany, Japan, and the United Kingdom equaled 125 percent of U.S. expenditures in 1978, compared to 47 percent in 1964.
- Between 1969 and 1978, Federal expenditures for university-based foreign affairs research declined from $20.3 million annually to $8.5 million, and funds for facilities dropped from $126 million in 1965 to $32 million in 1979.

The deterioration of graduate education as documented by the Commission is the outcome of demographic shifts and of shifts of corporate needs and government priorities in a period of "economic retrenchment."

One promising approach to this situation which has been tried in New York State is that of collaborative research. A primary example is the Centers for Advanced Technology program, which is based on cooperative effort between education and business/industry. The benefits expected from the establishment of these centers are that industry will have access to technical personnel and facilities with the ability to initiate and sustain advanced research, and that universities will realize gains from increased faculty hirings, new equipment acquisition, and the opportunity to work with industrial scientists.

A somewhat related approach to collaborative research exists in the field of education. Here, professors develop and pursue their research projects jointly with the classroom teacher. This approach ensures that research efforts are directed toward the solution of existing problems, encourages the formation of school/college partnerships, and guarantees that the results of research are disseminated to classroom teachers. Examples of this approach can be found at several institutions, Teachers College and Queens College among them.

The State University master plan reports that, "At the graduate level, the university centers and some university colleges engage in a continuing review process, scheduled so that each program will be evaluated at some point during a five-year cycle. Other SUNY campuses review all graduate programs simultaneously, also once every five years." Within the system as whole, each university center and campus which offers graduate education cannot and should not sponsor completely comprehensive programs of graduate or professional study, according to State University; to do so would not only cause unnecessary duplication, but would also prove prohibitively expensive. The plan recognizes, however, that some duplication is necessary. The university centers, especially, should stress basic comprehensive graduate education. Additional areas of specialization which lead to distinctive programs have developed and should continue to develop at individual campuses. Distinctive programs can be effectively established at relatively low cost through coordinated efforts within and across disciplines.

The 1980 SUNY master plan proposed three goals for University research which remain pertinent: "(1) increasing external support for SUNY research to enrich student and faculty scholarship; (2) enhancing research productivity, primarily via multidisciplinary and multi-campus cooperation; and (3) linking University resrach capacities to those of New York State's industrial and high technology community to contribute to social and economic progress."

"One important factor that contributes to the precariousness of the University's own research structure," according to the 1984 plan, "is the growing inadequacy of its available scientific equipment and instrumentation. In response, the Research Foundation of the State University of New York has begun a matching program for research capital equipment, funded at $1 million annually. When added to a new Federal instrumentation program from which SUNY hopes to benefit, the Research Foundation matching grants provide a modest but encouraging beginning." However, the proportion of equipment replacement falls well below the five-year useful lifetime of most research equipment before it becomes obsolete. State University says that separately budgeted cost-sharing funds need to be included in campus budgets to allow SUNY to share in the expected increase of Federal support for research equipment. The policies covering purchase of computers and digitalized equipment are being examined to reduce the time and effort needed to gain approval for purchase of these items.

In its 1980 Plan, SUNY stressed multi-campus and multi-discipline cooperation to increase research productivity. To supplement that approach, the University is adopting new strategies, according to its 1984 plan, including refinement of computerized information system for research funding opportunities, emphasis on proposal preparation for faculty research projects, and renovation of laboratory facilities.

"Research collaboration with industry and government is part of an integrated strategy rather than an uncoordinated and isolated activity," according to the master plan. SUNY has established an industrial liaison program in the Research Foundation's Office of Technology Transfer to establish linkages between university and industrial research efforts. An example of such research collaboration is the SUNY Stony Brook and Brookhaven National Laboratories cooperative research efforts in energy management, traffic safety, and disaster management.

State University suggests that a number of State and University initiatives should be undertaken to increase faculty research activity. Support for seed grants and research development must increase significantly to allow more faculty to gain initial viability in the research community, so as to obtain major research funding. State funds should be budgeted for the cost-sharing requirements of external grants. In addition, more flexible policy regarding maximum summer income, extra service payments, and contracted services is needed to encourage faculty to affiliate their research programs and consultancies with SUNY and the Research Foundation.

State University suggests that it should formulate policies that its faculty, researchers, and administrators can use when deciding whether to engage in research that will yield classified or sensitive information. Guidelines also need to be formulated for faculty and student involvement in private venture companies. Until this has been accomplished, each case should be carefully considered in the context of general guidelines designed to protect the broad mission and purpose of the University while not impeding the efforts of researchers freely and vigorously to explore fruitful relationships with private firms.

As previously mentioned, City University's master plan points out that, of its 300 degree programs leading to the master's degree, over 100, or 33 percent, are in the field of teacher education. This represents a major commitment of the University's resources to training the teachers and administrative staff of the City's public schools. In addition, CUNY colleges have responded to the needs of urban constituencies for advanced professional training by initiating new master's programs in fields such as accounting, computer science and information systems, applied urban anthropology, geriatric nursing, television production, and physical education.

Liberal arts programs comprise the City University's second largest category of master's degree programs (after teacher education programs). Within this subgroup, the initiation in the last quadrennium of new programs leading to the Master of Arts in liberal studies at four units of the University can be seen as testimony to a resurgence of interest in liberal learning by the mature student as well as innovative means chosen by faculty to illuminate the interdisciplinary nature of the liberal arts.

Twenty-nine programs at the doctoral level are currently offered at the City University Graduate School and University Center. The CUNY master plan points out that "Five of these — anthropology, French, English, history, and music — figured among the top fifteen programs in their respective fields according to a national survey of selective doctoral programs." All doctoral programs are offered through the Graduate Center, which permits optimal utilization of the facilities and other resources of the senior colleges. The Graduate Center plans to offer new doctoral programs in school community psychology, applied social psychology, and computer science.

According to City University's plan, "One of the most significant changes to have occurred in the recent evolutionary history of the American university is the emergence of the research center or institute as the principal means by which the academic community organizes research activities that transcends the boundaries of the traditional departments." Of the 51 centers currently in place at City University, 17 came into being in the last four years. The centers explore issues related to the urban economy and environment, promote the study of ethnic cultures, and expand the horizon of scientific and humanistic knowledge.

In the independent sector, Canisius, Hofstra, NYU, RIT, Sarah Lawrence, and St. John's reported the existence of internal systems for the review of programs and the deployment of resources; Hofstra, Sarah Lawrence, and St. John's cited graduate programs phased out or terminated following internal reviews. RIT noted that it subjects proposed programs to an evaluation of the adequacy of the resources available and defers implementation when the review indicates. Pace University had set guidelines for graduate programs covering quality, resources, and "internal and external need."

To strengthen the connections of their graduate study and research programs with business, industry, government, and other external parties, NYU and Canisius invite external involvement in curriculum design. Clarkson provides a "semester-in-industry" for graduate students. Several institutions are seeking external funding for this purpose. Albany Medical College cited existing collaborative efforts with the State Health Department, General Electric, Intermagnetics General, and other bodies.

In addition to the responses in master plans reviewed above, through its Doctoral Evaluation Project, the Education Department has also noted that institutions are seeking to strengthen graduate teaching and research through 1) increased use of and responsiveness to internal and external assessments; 2) improved integration of graduate study of the liberal arts with graduate study in technical fields, education, and the professions; 3) more alliances between institutions and between industry and institutions; and 4) the focusing of institutional resources on improving the training of students for careers in teaching, the professions, and emerging technical fields, and on increasing students' awareness and understanding of global issues.

The issues discussed in this chapter must be addressed and acted upon if the higher education community is going to remain a stable and vital force in the last decade of the century. Particular attention should be focused on the adequacy of the number of doctoral degrees awarded. Degrees and enrollment were down in five out of seven areas outlined in this section. The doctorate is considered to be the last step along the pipeline to obtaining a faculty position. Indications are that faculty shortages will occur as a result of the decline in the number of doctoral degrees being granted. One consequence of declining enrollments at all levels is that faculty shifts will occur as students' needs and interests change. There is the possibility that higher education is going to become less able to pursue its mission to advance knowledge. At this time many parts of higher education are in transition and trying to adjust to demographic and economic changes. In addition, many institutions have failed to adapt to the almost constant changes brought about by advances in technology. All of this has caused many in higher education to feel unsure about their mission and responsibilities. The results of the instability in higher education are that the role of institutions as disseminators of knowledge has become clouded, while institutions try to adapt — much too often after the fact — to the accelerating changes of the last 20 years. This has implications for more than just the higher education community. The quality of individuals and society reflect the type of education available. If education cannot provide knowledge that allows individuals to fully participate in a changing society, the quality of that society will deteriorate. Government, industry, and education must work together to insure that education can meet the needs of individuals as well as society.

Graduate education and research are critical to the well-being of the people of New York. Research is essential to advance the frontiers of knowledge, not only in scientific and technical disciplines for the innovations essential to economic growth, but also in the humanities and social sciences to deepen understanding of ourselves, the cultures of other Americans, and of the rest of the world in which we live. Graduate education is essential to prepare the future generations of scientists, researchers, and scholars who will discover and transmit knowledge in the natural sciences, the humanities and social sciences, and the learned professions.

Actions

The Regents set forth the following activities to be undertaken by colleges and universities during the period of this Plan:

8-a. That graduate degree-granting institutions offer only those graduate programs that they determine are educationally needed and for which there are resources to assure quality.

8-b. That graduate degree-granting institutions with the necessary strengths in appropriate disciplines develop graduate-level area studies programs, to educate the professionals and researchers needed to address international issues and individuals with appreciation for cultural diversity.

8.c That institutions take steps to assure the continued adequacy of their library collections to support their programs of study and research.

8-d. That institutions engaged in research in the disciplines of education increase, to the extent practicable, collaborative research efforts with personnel of New York's elementary and secondary schools. Such collaborative efforts best assure a direct effect on instruction.

During the period of this Plan, the Regents and the Department will:

8-e. Consider educational need and the adequacy of available resources in reviewing proposed graduate programs.

RECOMMENDATIONS

8-f. Maintenance of adequate resources for graduate education and research is essential to excellence in those areas; therefore, the Regents strongly urge the Governor to seek from the Legislature adequate support for the graduate education and research activities of New York's institutions, not solely in the natural sciences and the professions, but in the humanities and social sciences as well.

8-g. The Regents recommend that the Governor propose to the Legislature adequate funding for the Department's ongoing doctoral program evaluations and for extension of the methods used in such evaluations to selected disciplines at the master's degree level.

Issue 9. Responding to the need for equipment for instruction and research.

Rapid advances in computer technology in the past few years have rendered a major portion of the stock of instructional and research equipment in our colleges and universities obsolete. The 1983 report of the National Commission on Student Financial Assistance, "Signs of Trouble and Erosion: A Report on Graduate Education in America," pointed out that "One major survey indicates that university instrumentation inventories are nearly *twice* as old as those of leading commercial laboratories," and that "one survey of fifteen institutions indicates that their need for funds over the next three years is almost twice what they have spent in the last four simply in the fields of biological, chemical, and earth sciences, engineering, physics, and medicine." In the field of engineering in New York alone, the Regents 1982 report on "Engineering Manpower and Engineering Education in New York State" cited reports by 17 public and independent institutions with engineering programs that from eight percent to 80 percent of their engineering laboratory equipment was obsolescent or obsolete in 1981-82; the average was 32 percent of the equipment. Equipment renewal, once treated as a small annual expenditure, suddenly looms as a massive capital need. The 17 public and independent institutions reported a need in 1981-82 for $58 million for engineering laboratory equipment. The reported need for engineering technology laboratory equipment at the six institutions offering Bachelor of Technology (B.Tech.) programs was an additional $5.2 million. Such needs cannot easily be met by traditional budgeting and revenue sources, yet colleges and the State cannot afford to ignore the challenge of renewing research and instructional equipment, not just in engineering and the sciences, but for language laboratories, studios, and other campus resources. To ignore this challenge would be to deprive New York of the opportunity for leadership in research and in attracting new industry, and to leave the next generation inadequately prepared for the contemporary world.

Recognizing an equipment need in the field of engineering, State University included a request for an additional $3.7 million in its 1984-85 budget request for the purchase of engineering equipment for the university centers at Buffalo and Stony Brook, in response to its "conclusion that these funds for special equipment requirements at Stony Brook and Buffalo cannot be diverted from the University-wide equipment replacement allocation, nor are there any other sources of funding readily available." This sum, however, was not recommended by the Governor in the 1984-85 Executive Budget, nor was it appropriated by the Legislature.

To address part of the need for equipment, the Regents have included in their legislative program a bill to establish a Research Equipment Acquisition Program, which would provide grants of up to $500,000 each to institutions for up to half the cost of acquiring research equipment, with matching funding required from sources other than tuition, State or local tax levy funds or aid, institutional endowment, or endowment income. Action by the Legislature is pending. In his 1984 Message to the Legislature, the Governor proposed creation of "a new Advanced Research Equipment Acquisition Program to be undertaken by the State Dormitory Authority, which will assist research institutions in financing acquisitions on a cooperative basis."

In its master plan, State University of New York stated as a recommendation that "The University will seek increased support to replace outdated equipment and install new equipment that is vital to its academic programs" (#19). In 1977, the University instituted a property control system to estimate equipment needs; the needs were found to be substantial. Failure to replace equipment affects the quality of SUNY's academic programs. SUNY's equipment replacement program requires substantially more support.

According to its master plan, a major aim of City University is "To improve scientific equipment and facilities at every City University campus." In order to instruct students properly, to hire and retain faculty, to compete for grants, and to perform research, it is necessary that the University's facilities be in first-rate condition. The improvement of scientific equipment and facilities throughout the City University is critical for education in the sciences.

A City University task force on scientific equipment and facilities in 1980 found a great need for updated facilities and new equipment. It was determined that nearly all the colleges in the City University lacked specialized facilities necessary for advanced technical programs and in many cases lacked even the most basic scientific instruments needed for standard science courses. Inadequate financial resources have been the cause for this deterioration of facilities at the City University, which is known for its excellent scientific research. The plan says that a major University-wide effort is desperately needed in this area.

At the City University, computing is a subject of study (in computer science, electrical engineering, and data processing programs), a tool for data analysis, and an aid for instruction. Most City University campuses recognize the need for further development of computer science instruction and will implement new courses and programs in this area. According to the City University master plan, distributing limited resources equitably is one of the strategic problems which the University will face in coming years. In its 1984-85 budget request, the University asked for a lump sum appropriation for the long-term requirements of computer assisted instruction and other forms of academic computing.

In their master plan, the proprietary institutions recognize that state-of-the art equipment is an essential capital expenditure. Most of the colleges will continue to determine equipment needs by an evaluation of employment opportunities. Many proprietary institutions already use computer-assisted teaching equipment. Courses of action to be pursued include: continued improvement of computer-related programs, achievement of computer literacy for all graduates, expansion of computer learning centers, development of in-service faculty training courses, and acquisition of up-to-date equipment. A future consideration should be the sharing of equipment among institutions in the four sectors, according to the plan.

Among its recommendations, the Commission on Independent Colleges and Universities states that "The lack of up-to-date scientific and technical equipment is one of the most urgent problems facing postsecondary education," and recommends: "The State Education Department should recommend incentives to provide state funding for replacement and acquisition of scientific and technical equipment vital to New York's competitive educational and industrial capability" (#1).

In the independent sector, New York University plans to expand or upgrade its existing computer facilities throughout the University. Hofstra reported plans to enhance recently acquired computing facilities by increasing the number of terminals by over 40 percent. Clarkson has a systematic program to upgrade computing equipment, and is developing a network to connect the personal computer required of every student to the University's mainframes and to its Educational Resources Center.

Syracuse University recommends that the State and Federal agencies increase "funding of significant capital equipment programs" for educational institutions, and suggested that New York State provide tax incentives to computer manufacturers to donate and discount equipment to universities. Clarkson and Rochester Institute of Technology both recommended that the State provide support for acquisition of costly equipment, perhaps on a matching basis. Sarah Lawrence College cautioned that institutions should not distort their budgets "in the face of perceived benefits that may prove to be unnecessary in relation to their scale."

The sector plans note an urgent need to replace and update instructional and research equipment. A recent survey by the National Science Foundation reports that one-fourth of the research equipment owned by 43 leading research universities is obsolete. Equipment obsolescence at smaller colleges not devoted to research may be even more critical. The assistance recently accorded elementary and secondary schools for the purchase of computers presents the possibility that students may enter college with more advanced technical skills than colleges are able to accommodate. In terms of the advancement of knowledge, the support of economic development through research, and the quality of our academic programs, urgent attention must be given to the problem of equipment purchase in our postsecondary institutions.

Actions

In recognition of the Governor's efforts to assist institutions with the purchase of equipment, during the period of this Plan, the Regents and the Department will:

9-a. Survey the needs for teaching and research equipment, especially computer-assisted equipment, of a representative sample of postsecondary institutions. The results of this survey will be reported to the Governor and the Legislature with an indication of the fiscal implications of the findings and suggestions for action.

The Regents set forth the following activities to be undertaken by colleges and universities during the period of this Plan:

9-b. To conclude agreements with business and industry for the joint use of facilities or equipment, or both, for their mutual benefit.

RECOMMENDATIONS

9-c. The Regents recommend that the Governor seek from the Legislature adequate funding to meet the needs of colleges and universities for teaching and research equipment.

Issue 10. Making more effective use of limited resources by increasing interinstitutional and intersector cooperation, including joint program offerings, regional planning efforts, cooperation between postsecondary and secondary institutions, and shared use of facilities, library resources, and technology resources.

With increasing costs and projected enrollment decline, it is necessary to look at what interinstitutional efforts can do to maintain or enhance services. In many parts of New York, as well as in other states, interinstitutional cooperative activities have been shown to increase effectiveness by increasing efficiency in the use of educational resources, by attracting additional resources, by maintaining or expanding access to and diversity of educational services, and by developing innovative programs. Such cooperation thus contributes to the development of excellence.

New York's academic libraries have been among the pioneers in interinstitutional cooperation. The reference and research library resources systems have linked college and university libraries with special libraries, public libraries, and research libraries in networks that provide a wide range of access to resources. The coordinated collection development program, established in 1981, has improved the acquisition of materials in all regions of the State and has increased student and faculty access to library resources. Under that program regional plans for coordinated collection development involving 169 academic libraries across the State have been prepared.

Of the 336 New York libraries that participate in the SUNY/OCLC computer system, 163 are college and university libraries. Cooperative use of this computer system, and the similar Research Library Information Network, improves and expedites access to information and materials through the identification and location of resources in libraries which are members of these networks.

Beyond the area of cooperation among academic libraries, there are other potentially fruitful areas of interinstitutional cooperation, including shared use of facilities among postsecondary institutions — such as the eight interinstitutional programs through which a branch of one institution is located on the campus of another — or with other educational (or noneducational) institutions. Another fruitful area is curricular cooperation among institutions; currently, there are over 1,200 joint and dual-degree programs registered at New York degree-granting institutions. A major question is how information and communication technologies can best be used in this area to enhance access, excellence, and diversity.

In its master plan, State University of New York stated that by sharing resources as a system, SUNY campuses have established a tradition of making the most efficient use of resources. It stated as a recommendation (which the Regents have approved) that "The University will continue to explore and implement all valid alternatives for the effective use of its resources" (#1). State University cited its multiphase rolling plan as an example of coordinated budgeting and planning from a systemwide perspective. In 1982, State University of New York published a report, "Investment Needs: Engineering and the Engineering Technologies" which examined in a regional context the need for programs in this academic area. State University reported examples of cooperative projects with other public and independent colleges. One instance is the SUNY/CUNY Task Force on Teacher Education, which has held conferences of deans and is planning to issue a unified statement. Another example is a coordinated program arranged in cooperation with the State legislature which allows government workers to pursue a Master of Arts degree at State University at Albany or Queens College. State University campuses are cooperating with independent institutions at several of the State's Centers for Advanced Technology.

In its master plan, The City University of New York stressed its links with other City agencies, and especially with New York City public schools. The City University made a commitment in its plan to lend help in strengthening New York City's elementary and secondary schools and pointed out that it has over 100 collaborative programs with the City's schools which encompass a variety of activities, including teacher training and curriculum development and programs for special groups such as bilingual and gifted students and drop-outs. Examples of the diversity of the University's collaborative projects with public schools cited in the plan are:

- The *Select Program in Science and Engineering* (SPISE) at City College is designed to motivate and prepare disadvantaged tenth graders for careers in science and engineering. This program involves 475 tenth graders from 16 public high schools and sponsors laboratory sessions in science, engineering, and mathematics.
- The *Kingsborough Community College High School Consortium* is a new educational program designed to improve collaboration between Kingsborough and four of its local feeder high schools. The purpose of the consortium is to identify and serve appropriate high school students by raising their expectations and preparing them for college. The program provides basic skills and college-level instruction, and counseling; it aims to improve high school retention and to encourage students to continue education through college.
- The *Talent Search Program* at Bronx Community College provides outreach counseling services to high school students for careers, financial aid, and college admissions. The program involves 950 students from eight public high schools and familiarizes them with career options in higher education.
- The *Curriculum Development Program* at Brooklyn College is designed to improve the expository writing skills of third and fourth graders in P.S. 152. Over 100 students are involved in the program, as well as elementary school teachers who receive training in techniques for improving the teaching of expository writing.
- *Enhancement of Basic Algebra Teaching with Microcomputers and Programable Calculators* at Lehman College is designed to develop a method for using microcomputers to supplement traditional classroom instruction in elementary algebra at public high schools. The program involves 175 students at Evander Childs High School as well as the Herbert Lehman High School students.

- The Louis Armstrong Intermediate School 2270 at Queens College serves as a model for effective education of a cross-section of the urban population in the middle grades through a four-year curriculum that is planned in conjunction with college faculty.

City University is also involved in cooperative efforts with independent institutions. As noted under Issue 4, above, City University has joined with Teachers College, New York University, Fordham University, and Saint John's University, as well as with representatives of local organizations interested in the quality of public schooling in New York, to form the New York Alliance for the Public Schools.

The Regents commend City University for such efforts, and call on other colleges and universities to develop such efforts with local schools, both urban and rural.

"To re-vitalize library resources throughout the City University" is one of four major aims CUNY states in its plan. According to City University, library holdings and delivery of services have in recent years been rendered inadequate, due to financial cutbacks. To offer suggestions to remedy this situation, a Chancellor's Task Force on Libraries was formed. In its final report, the task force recommended system-wide policies and expanded inter-campus cooperation and coordination among the University libraries. The task force recommended a program to develop a unified library system in which the College libraries retain local autonomy, and the University seeks funds and leadership for University-wide programs. City University states that it will revitalize library resources at every campus but that increased funding is critically necessary.

The master plan for the proprietary institutions stated that during the next four years the proprietary institutions will continue cooperation with library systems. Also, there are sector plans to strengthen relationships with community organizations and social service agencies to identify common concerns. The plan asks that in the Regents effort to foster regional cooperation in planning and coordination, special attention should be directed toward the duplication of programs; it recommends that "the Regents encourage improvement in the articulation efforts among all degree granting institutions in the State" (C.2).

The recommendations submitted by the Commission on Independent Colleges and Universities include two recommendations concerning cooperation among libraries: "The Regents should review the current support of the New York interlibrary lending system" (#6), and "The State Education Department, in cooperation with the State University, City University and the independent institutions of the University of the State of New York, should provide the opportunity for additional postsecondary institutions to participate in the computerized State University On-line College Library Center (SUNY-OCLC)" (#7). Concerning interinstitutional cooperation more generally, CICU states that "The problems of institutional management, and intense financial and organizational pressures that characterize the modern campuses, often push cooperation with other institutions to a low priority." The Commission recommends: "The Regents should provide incentives (i.e., funding for joint planning, consortium arrangements and combined development grants) for interinstitutional cooperative ventures to avoid redundancies of program offerings, needless investments in staff, equipment and facilities" (#21).

In the independent sector, eight sampled institutional master plans cited examples of interinstitutional cooperation. NYU offers several joint programs with Cooper Union, a joint distinguished-seminar series with Rockefeller University, and cooperative activities with high schools in New York City. Hofstra University cited its joint M.A. program in history with Adelphi University. St. John's noted its cooperation with American Academy McAllister Institute in the area of funeral service administration. Daemen College has cooperative agreements with other colleges in the western region for mutual tuition waivers and cross-registration by students. Albany Medical College is developing joint graduate programs in public health sciences with the State University at Albany and the State Health Department. The Academy of Aeronautics has coordinated programs with New York Institute of Technology. Canisius cooperates with State University's College of Environmental Science and Forestry; RIT with the State University Colleges at Brockport, Cortland, and Geneseo.

Interinstitutional cooperation has assumed a new perspective and urgency with the advent of technology. The capacity to share resources through computerized networks presents the very real advantage of cost savings and enhancement of both quality and access. This technology also holds the promise of greatly extending the capacity of our research institutions through cooperative activities and the sharing of data bases and research results. The Regents strongly support the effort of colleges and universities to establish such networks.

Actions

The Regents set forth the following activities to be undertaken by colleges and universities during the period of this Plan:

10-a. Exploration by the State-supported Centers for Advanced Technology, the Center for Industrial Innovation at Rensselaer Polytechnic Institute, and other research universities in New York of the development of video and computer networks to expand their educational activities and services to industry.

10-b. Strengthening of existing regional organizations and, where appropriate, development of new ones, for the purpose of fostering increased regional cooperation in planning and coordination.

During the period of this Plan, the Regents and the Department will:

10-c. Develop a proposal for a dissemination program to be established for the purpose of making available to institutions that plan to initiate interinstitutional computerized networks the experience and expertise of those colleges and universities which have participated in successful programs.

RECOMMENDATIONS

10-d. The Regents recommend that the Governor propose to the Legislature the establishment of a program of State support for intersector and interinstitutional cooperative activities.

10-e. The Regents recommend that the Governor seek from the Legislature increased support for the cooperative efforts linking academic and research libraries with one another and with special libraries, public libraries, and school libraries in networks that provide a wide range of access to libraries.

Employment and Economic Development

New York's postsecondary institutions can make two principal contributions to the State's economic development: (1) preparing a well-educated work force that can function effectively within a rapidly changing economy, and (2) providing the information and research services essential to economic development.

Two issues relate to the ability of New York's colleges and universities to respond to this goal: "To assist the revitalization of New York's economy by working in cooperation with business and industry." They are:

Issue 11. Employment. Identifying changing personnel requirements and providing appropriate adjustments in academic programs to meet these requirements, particularly in such costly fields as the health professions and engineering. Exploring ways to encourage graduates of advanced programs in these fields to stay in New York State.

Issue 12. Economic Development. Using college and university instructional, service, and research programs to promote the economic growth of the State. Increasing partnerships among institutions of higher education and secondary schools, business and industry, and economic development agencies to support economic development.

America's economy is undergoing a major transformation. The changes are no less significant than those caused by the Industrial Revolution. Amid continuing unemployment, 17 to 26 million new jobs will emerge by 1990, according to the U.S. Bureau of Labor Statistics. These will include a limited number of jobs related to development, production, and servicing in high technology industries. At the same time, the introduction of robots into production lines will lead to major declines in "blue collar" jobs in the late 80's and a continued downward trend in the proportion of the labor force engaged in the production of goods. The transformation of industry for which the nation must prepare is likely to be similar to the transformation of agriculture in the first half of this century; today, only three percent of America's workers are responsible for feeding the nation, compared to 40 percent at the turn of the century.

New York State's economy was affected by two recessions in the past ten years, 1974-76 and 1981-82. According to the State Labor Department, at the end of the first recession, in 1976, nonagricultural wage and salary employment in the State averaged 6.8 million jobs . By 1981, that figure had grown to 7.3 million jobs. However, under the influence of the 1981-82 recession, nonagricultural employment in New York fell in 1982 by some 53,000 jobs. In March 1984 it stood at 7.4 million.

Correspondingly, New York's unemployment rate hit its peak for the 70's in 1976, when it stood at 10.3 percent. In comparison, the unemployment rate for the nation as a whole was only 7.7 percent. The State's unemployment rate fell with the end of the 1974-76 recession, but rose again with the onslaught of the 1981-82 recession. Unemployment in New York did not rise as much in 1981-82 as it did for the nation as a whole, however. In 1982 the State Labor Department recorded an average unemployment rate of 8.6 percent, up from 7.1 percent in 1979 but markedly lower than the 9.7 percent unemployment rate for the nation as a whole in 1982. By March 1984 it had declined to 7.7 percent. Region-by-region, unemployment rates varied considerably in March 1984, ranging from 5.5 percent in the Poughkeepsie area and on Long Island to 10.7 percent in Buffalo.

Not seen in the overall data on employment and unemployment is a trend in New York's economic base away from manufacturing and toward service industries. In 1982 there were fewer than 1.4 million jobs in manufacturing in New York State, the lowest level recorded since 1939. Between 1972 and 1982, jobs in manufacturing in New York State declined by 240,000. The only exceptions to this industry-wide trend were in three areas: instruments and related products; communication equipment and electronic components; and printing, publishing, and allied industries. Thus, there has been a trend away from heavy manufacturing "smokestack industries" such as primary metals and automobile production toward the so-called "high technology industries." In 1982, "hi-tech" industry accounted for about half of the State's manufacturing jobs.

In contrast to the manufacturing sector of New York's economy, the service sector (excluding government) has been growing. Jobs in the service sector rose to a record high of over 1.8 million in 1982 (411,800 more than in 1972), in comparison to the fewer than 1.4 million manufacturing jobs that year. Finance, insurance, and real estate provided 670,500 jobs in 1982, a combined gain of 79,200 jobs over 1972 and about equal to the total number of manufacturing jobs in "hi-tech" industry. In March 1984, finance, insurance and real estate accounted for 697,300 jobs, over nine percent of the State's total nonagricultural employment. Within the service sector, virtually all employment growth since 1950 has been in information-related occupations, such as accounting, law, secretarial work, and teaching. It is these information-related portions of the service sector that are projected to provide greatly increased proportions of jobs through the rest of this century.

The Regents recognized these trends in the September 1983 policy statement on "The Role of Education in Support of New York State's Economic Development." Two additional significant factors identified in that statement were (1) the importance of small businesses and (2) the expansion of foreign trade. In foreign trade, U.S. exports increased from six percent to 13 percent of the Gross National Product. Reinforcing the importance of the service sector, the statement pointed out that banking, insurance, advertising, and tourism now constitute 23 percent of all U.S. foreign exports, or $128 billion in sales a year. In addition, export-related production accounts for about 12 percent of New York's manufacturing jobs, according to the State Science and Technology Foundation. The importance of foreign trade as a factor in the State's economy is likely to increase in the decade ahead.

Together with concerns about the transformation of the national and State economies, there are concerns over productivity. Nationally, America's growth rates have lagged behind those of France, West Germany, and Japan. In the 60's, America's economy ranked first in GNP per capita among the world's industrial market economies, and in 1970 America's GNP represented 30 percent of the total world GNP. Since 1973, however, America's GNP per employed worker has grown by an average of only 0.1 percent per year. There is some reason for optimism, however, in the nation's economy, which showed a surprisingly strong 7.5 growth rate for the second quarter of 1984. Today, America's GNP per capita ranks ninth among the world's industrial market economies.

One key factor affecting productivity growth rates is the introduction of innovations. This is related to the level of effort devoted to research and development activities, which are a primary generator of innovations. A comparison of the number of research and development scientists per 1,000 workers in the United States, West Germany, and Japan in the mid-60's and the mid-80's is instructive:

Table 18

NUMBER OF RESEARCH AND DEVELOPMENT SCIENTISTS PER 1,000 WORKERS

	Mid-60's	Mid-80's	Change
United States	64	57	−10.9%
West Germany	23	40	+73.9%
Japan	25	50	+100.0%

Source: "Federal Legislation and Education in New York State," 1984.

In the United States, the number of research and development scientists per 1,000 workers declined by over ten percent over the past 20 years; in West Germany, the number grew by almost 75 percent over the same period; in Japan, it doubled. Further, no more than 70 percent of America's research and development scientists are engaged in civilian research; in Japan, over 99 percent are so engaged. In part, this problem suggests a need to examine both relations between higher education and industry and the numbers of persons earning baccalaureate and graduate degrees in scientific disciplines.

As shown in Table 19, the total of baccalaureate degrees granted in New York in the biological sciences, computer and information sciences, engineering (incuding engineering technology), and the physical sciences grew by 58.4 percent between 1969-70 and 1981-82. Over the same period, the total of number of baccalaureates granted in the State, in all fields, grew by only 27.6 percent, so the number in those four broad categories grew from 13.5 percent of the total in 1969-70 to 16.7 percent in 1981-82. The largest rate of growth was in the computer and information sciences, over 1,300 percent, from 165 to 2,314 degrees, but greater-than-average growth also took place in the biological sciences and in engineering. On the other hand, the number of baccalaureates granted in the physical sciences declined.

At the graduate level, the picture is quite different. In 1969-70, master's degrees in these four categories constituted 12.8 percent of all master's degrees earned in New York; in 1981-82, they constituted only 11.2 percent. While the total number of master's degrees awarded in New York grew by almost 25 percent, those in these four areas grew by only nine percent. Only computer and information sciences saw a greater-than-average growth; the number of master's degrees conferred in engineering and in the physical sciences declined. At the doctoral level, while the total number of degrees conferred in all fields was virtually unchanged between 1969-70 (3,268) and 1981-82 (3,259), the number earned in the biological sciences, computer and information sciences, engineering, and the physical sciences dropped by 2.7 percent. Those four fields produced 32.3 percent of all doctorates conferred in New York in 1969-70; they produced 31.5 percent in 1981-82. Displaying the same pattern that was evident at the master's degree level, the number of doctorates earned in engineering and the physical sciences declined. The biological sciences and computer and information sciences had increases.

In 1981-82, State University awarded 32 percent of the baccalaureates in these four fields, 15.8 percent of the master's degrees, and 29.7 percent of the doctorates. City University awarded 8.4 percent of the bacca-

Table 19

DEGREES IN THE SCIENCES

1969-70 - 1981-82

	Baccalaureate			Master's			Doctoral		
	1969-70	1981-82	Change	1969-70	1981-82	Change	1969-70	1981-82	Change
Biological Sciences	2,822	4,071	+44.3%	550	651	+18.4%	286	430	+50.3%
Computer Sciences	165	2,314	+1,302.4%	139	616	+343.2%	10	26	+160.0%
Engineering	3,895	5,993	+53.9%	2,115	1,999	-5.5%	340	259	-23.8%
Physical Sciences	2,198	2,007	-8.7%	606	452	-25.4%	419	311	-25.8%
TOTAL	9,080	14,385	+58.4%	3,410	3,718	+9.0%	1,055	1,026	-2.7%
All Fields	67,461	86,108	+27.6%	26,653	33,134	+24.3%	3,268	3,259	-0.3%

Source: NYSED, Bureau of Postsecondary Planning, 1984.

laureates, 6.1 percent of the master's degrees, and 5.7 percent of the doctorates. Independent institutions awarded 59.6 percent of the baccalaureates, 78.1 percent of the master's degrees, and 64.5 percent of the doctorates.

In an exploration of employment, economic development, and higher education, it is important to keep two points in mind. The first is that support for economic development, while important, is not the whole of the mission of higher education; equally important are the search for truth, the extension, preservation, and transmission of knowledge in all fields, the development of creativity, and the encouragement of personal and social development. Second, postsecondary educational programs generally provide knowledge and skills that apply to clusters of related occupations, rather than narrowly to specific jobs. Therefore, it would be misleading to make strict comparisons between employment prospects in specific job categories and the number of degrees granted in specific disciplines. While New York's colleges and universities need to be aware of projected employment prospects in occupations normally demanding postsecondary education, the relationship between supply of graduates and demand by the economy should be addressed on a more aggregate level.

Issue 11. Employment. Identifying changing personnel requirements and providing appropriate adjustments in academic programs to meet these requirements, particularly in such costly fields as the health professions and engineering. Exploring ways to encourage graduates of advanced programs in these fields to stay in New York State.

In the context of higher education in New York State and this Plan, work force planning is concerned with the general problem of assuring that the economy of the State has appropriate numbers of workers and professionals to operate effectively and efficiently. Even if it were desirable, it is not possible to coordinate or control closely either manpower or employment in a free society. Information is imperfect and analysts are not able to predict organizational and technical changes or their effect on personnel supply and demand.

The latest employment projections for the nation, issued by the Bureau of Labor Statistics of the U.S. Department of Labor in 1983, provide a range of low-, moderate-, and high-trend employment projections through 1995. Each trend reflects different economic assumptions, but the three are generally similar. Using the moderate-trend projections, BLS identified the 40 occupations projected to have the largest job growth between 1982 and 1995.

The 41 occupations (two are tied) projected to be among the 40 with the largest job growth by 1995 are shown in Table 20. Only nine normally require postsecondary education. Leading these nine are Registered Nurses, with a projected growth of 642,000 jobs between 1982 and 1985, followed by Kindergarten and Elementary School Teachers (511,000 growth), Accountants and Auditors (344,000), Electrical and Electronic Technicians (222,000), Computer Systems Analysts (217,000), Electrical Engineers (209,000), Computer Programmers (205,000), Physicians (163,000), and Lawyers (159,000). Ahead of them in terms of job growth are such occupations as Building Custodians (#1—779,000 growth), Cashiers, Secretaries, General Office Clerks, and Sales-clerks.

Tables 21, 23, and 25 display projected job growth in occupations normally requiring associate degree, baccalaureate degree, or graduate degree-level education. Job growth is shown over both 1982 levels and over 1979, prerecession, levels. At the associate degree level, the largest numbers of jobs are projected for secretaries and stenographers, but this is an employment category for which secondary education is also appropriate. At the baccalaureate level, the largest categories are Sales and Service Manager (again, a category in which a baccalaureate degree may not be necessary) and Pre-school, Kindergarten, and Elementary School Teachers.

In addition, the Federal Health Resources and Services Administration estimates that the United States will need about 4,000 more dentists, and 450,000 to 500,000 more baccalaureate trained nurses, in the year 2000 than the number projected to be available.

In particular, it should be noted that high technology industry and technology-oriented occupations will not provide large numbers of jobs. According to the Bureau of Labor Statistics, technology-oriented occupations (engineers, life and physical scientists, mathematical specialists, engineering and science technicians, and computer specialists) will account for only one new job in 25 between 1982 and 1995.

In a February 1983 study of "The Job Market for College Graduates, 1960-1990," Russell W. Rumberger of Stanford University reviewed changing employment prospects for college graduates since the late 1950's and analyzed the prospective job market through 1990 in the BLS projections. He noted a major change in the educational attainment of the labor force since 1960. "The number of persons with 4 or more years of college increased 200 percent. By 1980 almost one out of five workers had completed a college degree and more than one out of four young workers had acquired that much education." Rumberger points out that, although employment in "professional, high-level occupations" (according to skill and educational levels needed) also grew rapidly, it "could not keep pace with the growth in

Table 20
OCCUPATIONS WITH LARGEST JOB GROWTH, UNITED STATES, 1982-1995[1]

	Size		Expansion	
	Rank	Number (thousands omitted)	Rank	Percent Change
Building Custodians	1	779	32	27.5%
Cashiers	2	744	8	47.4
Secretaries	3	719	28	29.5
General Office Clerks	4	696	27	29.6
Salesclerks[2]	5	685	36	23.5
*Registered Nurses	6	642	6	48.9
Waiters and Waitresses	7	562	21	33.8
Kindergarten and Elementary School Teachers	8	511	12	37.4
Truckdrivers	9	425	35	26.5
Nursing Aides and Orderlies	10	423	17	34.8
Technical Sales Representatives	11	386	29	29.3
*Accountants and Auditors	12	344	11	40.2
Automotive Mechanics	13	324	13	38.3
Supervisors of Blue-collar Workers	14	319	34	26.6
Kitchen Helpers	15	305	15	35.9
Guards and Doorkeepers	16	300	9	47.3
Food Preparation and Service Workers--Fast Food Restaurants	17	297	14	36.7
Store Managers	18	292	25	30.1
Carpenters	19	247	30	28.6
*Electrical & Electronic Technicians	20	222	5	60.7
Licensed Practical Nurses	21	220	16	37.1
*Computer Systems Analysts	22	217	1	85.3
*Electrical Engineers	23	209	4	65.3
Computer Programmers	24	205	2	76.9
Maintenance Repairers, General Utility	25	193	31	27.8
Helpers, Trades	26	190	24	31.2
Receptionists	27	189	7	48.8
Electricians	28	173	23	31.8
*Physicians	29	163	20	34.0
Clerical Supervisors	30	162	18	34.6
Computer Operators	31	160	3	75.8
Sales Representatives, Nontechnical	31	160	33	27.4
*Lawyers	33	159	19	34.3
Stock Clerks, Stockroom & Warehouse[2]	34	156	38	18.8
Typists[2]	35	155	40	15.7
Delivery and Route Workers[2]	36	153	37	19.2
Bookkeepers (hand)[2]	37	152	39	15.9
Cooks, Restaurant	38	149	10	42.3
Bank Tellers	39	142	26	30.0
Cooks, Short Order, Specialty and Fast Food	40	141	22	32.2

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*Postsecondary education normally required.

[1] Includes only detailed occupations with 1982 employment of 25,000 or more. Data for 1995 are based on BLS moderate-trend projections.

[2] Rate of growth is slower than the average rate projected for all occupations, 1982-1995--25.0%.

Source: data from U.S. Department of Labor, Bureau of Labor Statistics, "The Monthly Labor Review," November 1983.

Table 21
U.S. EMPLOYMENT IN OCCUPATIONS WHICH OFTEN REQUIRE ASSOCIATE DEGREE EDUCATION
Actual: 1979, 1982 Projected: 1995
(Employment in Thousands)

	1979	1982	1995[1]	% Change 1979-82	% Change 1979-95
Business and Commerce Technologies					
Secretaries and Stenographers	2,624	2,711	3,410	+3.3	+30.0
Data Processing Technologies					
Computer Operat. Personnel	548	580	737	+5.8	+34.5
Health Services & Paramed. Technol.					
Registered Nurses	1,165	1,312	1,954	+12.6	+67.7
Medical Assistants	88	100	148	+13.6	+68.2
Clinical Laboratory Technol.	195	209	291	+7.2	+49.2
Dental Hygienists & Assistants	187	222	317	+18.7	+69.5
Physical Therapy Assist.	27	33	55	+22.2	+103.7
Radiologic Technol.	97	110	157	+13.4	+61.9
Surgical Technicans	31	35	49	+12.9	+58.1
Mechanical & Engineering Technol.					
Civil Engineer Technicians	32	35	58	+9.4	+81.3
Electric. & Electron. Techn.	350	366	589	+4.6	+68.3
Indust. Engineer Techn.	33	27	35	-18.2	+6.1
Mechan. Engineer. Techn.	47	48	72	+2.1	+53.2

[1] Moderate trend projection.

Source: U.S. Department of Labor, Bureau of Labor Statistics, The Monthly Labor Review, November 1983.

Table 22
ASSOCIATE DEGREES CONFERRED IN SELECTED TWO-DIGIT HEGIS CATEGORIES, NYS, 1979 and 1982

	1979	1982	% Change 1979-82
Business & Commerce Technologies	16,145	18,951	+17.4
Data Processing Technologies	1,179	2,336	+98.1
Health Serv. & Paramedical Tech.	6,671	5,932	-11.1
Mechanical & Engineering Tech.	4,577	4,974	+8.7

Source: NYSED, College and University Degrees Conferred in New York State, series publication, 1978-79 and 1981-82.

Table 23
U.S. EMPLOYMENT IN OCCUPATIONS WHICH OFTEN REQUIRE BACCALAUREATE DEGREE EDUCATION
Actual: 1979, 1982 Projected: 1995
(Employment in Thousands)

	1979	1982	1995[1]	% Change 1979-82	% Change 1979-95
Agriculture & Natural Resources					
Foresters & Conservationists	29	31	34	+6.9	+17.2
Biological Sciences					
Biological Scientists	47	52	70	+10.6	+48.9
Business and Management					
Sales & Service Managers[2]	2,086	2,161	2,778	+3.6	+33.2
Accountants & Auditors	830	856	1,200	+3.1	+44.6
Assessors	29	28	31	-3.4	+6.9
Buyers, Wholesale, Retail	251	256	331	+2.0	+31.9
Cost Estimators	94	92	134	-2.1	+42.6
Employment Interviewers	59	57	86	-3.4	+45.8
Personnel & Labor Rel. Specialists	187	203	250	+8.6	+33.7
Insurance Agents	23	31	44	+34.8	+91.3
Underwriters	73	76	92	+4.1	+26.0
Purchasing Agents	178	177	225	-.6	+26.4
Communications					
Public Relations Specialists	85	90	115	+5.9	+35.3
Announcers	48	55	70	+14.6	+45.8
Reporters	49	51	66	+4.1	+34.7
Writers and Editors	114	120	162	+5.3	+42.1
Computer and Information Sciences					
Programmers	231	266	471	+15.2	+103.9
Systems Analysts	216	254	471	+17.6	+118.1
Education					
Adult Education Teachers	107	125	165	+16.8	+54.2
Pre-school, Kinder., Elem. Teachers	1,668	1,647	2,274	-1.3	+36.3
Secondary Teachers	1,083	1,024	1,152	-5.4	+6.4
Vocational Education Teachers	99	98	143	-1.0	+44.4
Engineering					
Aero-Astronautic Engineers	44	44	62	0	+40.9
Chemical Engineers	58	56	80	-3.4	+37.9
Civil Engineers	156	155	228	-.6	+46.2
Electrical Engineers	300	320	528	+6.7	+76.0
Industrial Engineers	171	160	227	-6.4	+32.7
Mechanical Engineers	216	209	318	-3.2	+47.2
Petroleum Engineers	16	26	32	+62.5	+100.0

Table 23 continued

	1979	1982	1995[1]	% Change 1979-82	% Change 1979-95
Fine and Applied Arts					
Commercial & Graphic Artists & Design.	119	133	167	+11.8	+40.3
Other Designers	166	180	253	+8.4	+52.4
Health Professions					
Dieticians	41	44	62	+7.3	+51.2
Registered Nurses	1,165	1,312	1,954	+12.6	+67.7
Respiratory Therapists	42	46	67	+9.5	+59.5
Occupational Therapists	22	25	40	+13.6	+81.8
Physical Therapists	37	43	69	+16.2	+86.5
Mathematics					
Mathematical Specialists	48	48	62	0	+29.2
Physical Sciences					
Chemists	87	89	108	+2.3	+24.1
Geologists	38	49	60	+28.9	+57.9
Public Affairs and Services					
Construct. Inspect., Pub. Admin.	41	39	46	-4.9	+12.2
Health & Reg. Inspect.	103	101	108	-1.9	+4.9
Counselors	140	148	163	+5.7	+16.4
Social Workers	328	345	416	+5.2	+26.8
Tax Exam., Revenue Agents	48	47	52	-2.1	+8.3
Social Sciences					
Economists	29	30	38	+3.4	+31.0

[1] Moderate trend projection.

[2] Includes auto service and parts managers; restaurant, cafe, and bar managers, state managers, and wholesalers.

Source: U.S. Department of Labor, Bureau of Labor Statistics,
The Monthly Labor Review, November, 1983.

Table 24
BACCALAUREATE DEGREES CONFERRED IN SELECTED TWO-DIGIT HEGIS CATEGORIES, NYS, 1979 and 1982

	1979	1982	% Change 1979-82
Agriculture & Natural Resources	592	649	+9.6
Architecture & Environmental Design	1,061	980	-7.6
Biological Sciences	4,653	4,071	-12.5
Business and Management	13,982	17,296	+23.7
Communications	2,371	2,830	+19.4
Computer & Information Sciences	1,028	2,314	+125.1
Education	6,781	5,322	-21.5
Engineering	5,220	5,993	+14.8
Fine and Applied Arts	5,092	5,199	+2.1
Health Professions			
Nursing	3,884	3,906	+.6
Pharmacy	589	588	-.2
Mathematics	1,314	1,119	-14.8
Physical Sciences	2,093	2,007	-4.1
Public Affairs & Services	3,206	2,645	-17.5
Social Sciences	13,678	12,180	-11.0

Source: NYSED, College and University Degrees Conferred in New York State, series publication, 1978-79 and 1981-82.

Table 25
EMPLOYMENT IN OCCUPATIONS WHICH OFTEN REQUIRE GRADUATE EDUCATION
Actual: 1979, 1982 Projected: 1995
(Employment in Thousands)

	1979	1982	1995[1]	% Change 1979-82	% Change 1979-95
Health Professions					
Chiropractors	22	25	32	+13.6	+45.5
Dentists	161	173	213	+7.5	+32.3
Registered Nurses	1,165	1,312	1,954	+12.6	+67.7
Optometrists	32	28	34	-12.5	+6.3
Pharmacists	143	151	192	+5.6	+34.3
Physicians	436	479	642	+9.9	+47.2
Speech Pathologists	40	42	54	+5.0	+35.0
Veterinarians	34	36	48	+5.9	+41.2
Psychology					
Psychologists	69	83	110	+20.3	+59.4
Education					
College & University Faculty	686	744	632	+8.5	-7.9
Librarians	147	151	170	+2.7	+15.6
Architecture & Env. Design					
Architects	75	84	118	+12.0	+57.3
Theology					
Clergy	NA	317	332	NA	NA
Law					
Lawyers	393	465	625	+18.3	+59.0

[1] Moderate trend projection.

Source: U.S. Department of Labor, Bureau of Labor Statistics, "The Monthly Labor Review," November 1983.

Table 26
GRADUATE DEGREES CONFERRED IN SELECTED TWO-DIGIT HEGIS CATEGORIES, NYS, 1979 and 1982

	1979	1982	% Change 1979-82
Health Professions			
Chiropractic	226	221	-2.2
Dentistry	350	383	+9.4
Optometry	38	66	+73.7
Medicine	1,668	1,760	+5.5
Nursing	762	811	+6.4
Veterinary Medicine	72	78	+8.3
Psychology	1,062	1,174	+10.5
Education	10,504	9,106	-13.3
Library Science	709	572	-19.3
Architecture & Envir. Design	369	377	+2.2
Theology	571	515	-9.8
Law	4,005	4,060	+1.4

Source: NYSED, College and University Degrees Conferred in New York State, series publication, 1978-79 and 1981-82.

educational attainments." He characterized the 1960's, when the number of such jobs grew rapidly, as "a golden era for college graduates." In contrast, the 70's saw a deterioration in such employment opportunities. "By 1980 the situation for new college graduates was similar to the situation for new college graduates in 1960."

Rumberger sees the job market for college graduates in the 80's "more like the 1950s and 1970s than the 1960s." He points out that educational attainments of the work force will continue to increase, but "employment growth in professional and managerial occupations will be smaller than in either the 1960s or the 1970s." He concludes that "College graduates may continue to hold a competitive edge in the labor market, but an increasing number will be forced to accept jobs incommensurate with their level of training."

One effect of Rumberger's analysis is to point up the importance of the non-occupational side of postsecondary education, the side that liberalizes and humanizes, that enhances the ability of the individual as a member of society and as a citizen. Because of the prospective nature of the job market, colleges should not unduly emphasize job training as an aspect of their missions. The broadening and liberating effects of higher education on the individual must not be submerged. The Regents recognized this in the paper on "The Role of Education in Support of New York State's Economic Development," in pointing out that "The analytical skills needed by those engaged in business, science, government, and education are nurtured and developed through study of the liberal arts."

Beyond the foregoing analyses, a few specific areas in the economy — health care, education, and particularly high technology industry — have been identified as targets for State attention. The relationships among jobs, manpower, and education programs are relatively close in these areas.

In the planning period from 1984 to 1988, particular emphasis should be placed on three professional areas: engineering and technology, teaching, and health-related professions. Engineering and technology are important elements in a number of State strategies for economic development and revitalization. In education, the situation is in a state of flux caused by changing demographics and emerging priorities in elementary/secondary education. The health-related professions have been the subject of several major studies in recent years, and the full effect of these studies on educational and manpower policy has yet to be seen. During the period of this Plan, the Department will update its study of physician manpower on the basis of data collected in the next registration of physicians.

In recent years the number of residencies available for the advanced training of graduates of medical schools has diminished nationally, and in New York State as well. The effect of this curtailment varies by medical specialty and hospital. Nationally, the medical school class of 1984 was generally successful in applying for postgraduate residencies; all 14,741 American-born and trained medical school seniors participating in the National Residency Matching Program secured positions, 92 percent in the first round. However, in an article in the May issue of the "Journal of Medical Education," Dr. John Graettinger noted that not all graduates of U.S. medical schools can "count on getting that education in the specialty of their choice." The most competitive of the 18,457 first-year residency positions currently are in emergency medicine, obstetrics and gynecology, orthopedic surgery, otolaryngology, urology, and diagnostic radiology. Less competitive were residencies in family medicine, psychiatry, pathology, and preventive medicine. This has implications for physician supply, health-care costs, and undergraduate medical education. It is with this last matter that the Regents are particularly concerned.

In its 1984 master plan, State University points out that, for the 1980's, it already has given recognition to the need and demand for graduate training and research and for engineering and the engineering technologies. The plan notes that, in 1982, State University issued a special study, "Investment Needs: Engineering and the Engineering Technologies," that presented its findings on the demand for engineers and engineering technologies, and surveyed the University's strengths and needs in meeting this demand. This document included recommendations for programmatic action to be taken at 13 campuses of the State University in every region of the State.

State University states that, although the number of physicians has increased markedly in the past decade, changes in the knowledge and technology of medicine appear to be sufficient to continue to provide professional opportunities for physicians. Similarly, these changes provide a continuing expansion in the career opportunities for all health professionals. Increasingly, according to State University, it has been recognized that, within health care, the system has characteristics which generate "supplier induced demand," thus making conventional forecasting techniques inadequate for projecting personnel needs. Student interest in the health professions remains high, and the health science programs attract considerably more applicants than places available for entering students. The proportion of minority representatives in the health professions continues to remain relatively stable. State University has intensified its efforts in the recruitment of minority students for graduate and professional programs.

State University points out that the combination of recruitment and incentives for retention may influence the degree to which health professionals may be encouraged to remain in the State. In medicine, the site of postgraduate training has more influence over the location decisions of physicians than the site of medical school attendance. Similarly, where students pursue programs in dentistry, nursing, and the applied health professions influences the site of professional practice. Programs which provide financial support in exchange for practice in a locality have had some, but limited, influence over location decisions of graduates. Public institutions have a history of seeing graduates from degree and postgraduate programs remain within the State, particularly when compared with other institutions, according to State University.

The Education Department will continue to work with the Commerce and Labor Departments, the Science and Technology Foundation, and other government agencies as well as the Business Council and other segments of the private sector, on special studies and planning activities. These cooperative ventures provide important opportunities to share information and improve our respective understanding of the problems that must be dealt with. In all cases the primary objective will be to ensure that the State has a well-educated work force that can respond to the needs of business and industry. Studies that are undertaken will all be designed with this objective in mind.

If the image of the isolated ivory tower was ever a reality, it is certainly not the case today. Colleges and universities are as sensitive to marketplace factors as are businesses and industries. Their ability to recruit students is intimately related to the quality of their "product" — the educational programs they offer — and the proficiency of their marketing techniques. In recruiting their faculty and staff, colleges face strong competition from business and industry in many high demand fields. To respond to their own needs and to those of the greater society, colleges and universities must have extensive information on which to base their planning to meet work force needs.

Actions

To support New York employment needs, the Regents set forth the following actions to be undertaken by colleges and universities during the period of this Plan:

11-a. Maintaining and building upon the knowledge, skills, and attitudes developed in a liberal arts education at the same time that they provide the technical skills related to specific careers.

11-b. Developing awareness among students and employers of the applicability of knowledge and skills developed in the study of the humanities and the social and behavioral sciences to the needs of business and industry, government, and society.

11-c. Enchancement of advisement for undergraduates considering careers in health-related professions to provide strong directive counseling on the relative need for various categories of physicians and other health personnel. Intensification of efforts by medical schools and postgraduate residency programs at advising students on the relative need for physicians in various specialities and locations.

During the period of this Plan, the Regents will:

11-d. Work with the State Commerce and Labor Departments and the State Occupational Information Coordinating Committee to provide postsecondary institutions annually information on high demand occupational areas requiring college degrees and statistics on degrees awarded in related disciplinary areas.

11-e. In consultation with medical school deans, the Department of Health, and other appropriate bodies, undertake a study to identify those areas in which closer articulation between undergraduate and graduate medical education is desirable and to suggest actions to bring it about.

Issue 12. Economic Development. Using college and university instructional, service, and research programs to promote the economic growth of the State. Increasing partnerships among institutions of higher education and secondary schools, business and industry, and economic development agencies to support economic development.

New York's postsecondary institutions have a significant role in the State's future economic growth, especially in the area of advanced technology. In the September 1983 statement on "The Role of Education in Support of New York State's Economic Development," with the advice of the Business Council the Regents determined that the capacity of New York's educational system most directly related to economic development is research. The promising technologies that represent the greatest economic opportunity for New York are in two broad technology groups: Medical/Biological and Electronics/Information. Planning efforts need to be focused on the future potential of these key industries, and others that may be identified as of major importance (such as Advanced Materials), and on the programs, service, and research postsecondary institutions can develop to support growth on a regional and statewide basis.

According to the New York State Science and Technology Foundation, the seven New York State Centers for Advanced Technology have reported the following developments, illustrative of their activities:

Biotechnology/Agriculture (Cornell University):

Sixteen research projects on aspects of molecular biology and genetic engineering. Establishment of central facilities for the program in tissue culture and a hybridoma and flow cytometry laboratory. Conducting seminars and workshops in biotechnology involving industrial sponsors.

Computer Applications and Software Engineering (Syracuse University):

Projects on data processing algorithms and system reliability, existential representation of sets of terms in a functional programming language, rheumatology knowledge base and expert systems. Conducting symposia and workshops on advanced subjects for industry. Cooperating with the Greater Syracuse Chamber of Commerce to create an incubator facility for fledgling industry.

Computer and Information Systems (Columbia University):

Projects to develop two different types of supercomputers.

Health Care Instruments and Systems (SUNY Buffalo):

A variety of projects related to product development.

Medical Diagnosis and Therapy (SUNY Stony Brook):

Research on the synthesis of DNA from Hepatitis A Virus RNA, on expression of Human Lung Oncogene in E. coli, and on the molecular basis of Human Interferon. New kinds of research and development are being developed with new industrial partners; symposia on protein engineering and other topics are planned.

Optics (University of Rochester):

Projects on robot vision, low light level optical processing, holography, fiber optics coupling, and light emission from silicon. Working with the other colleges in its consortium on programs to address the industry's need for technicians.

Telecommunications (Polytechnic Institute of New York):

Projects dealing with current applications and needs in telecommunications, such as investigation of methods for combining multi-vendor components, cellular radio, and development and application of artificial intelligence techniques. Providing for the work force needs of the industry in projects involving the other colleges in its consortium.

Beyond the activities of the seven CATs, there are economic development needs that can be addressed, at least in part, by New York's postsecondary institutions. These include research, education, and service in other technological fields (such as Advanced Materials) and development of incubator space programs for fledgling business.

The State University master plan points out that, among other contributions to society, education "contributes to economic prosperity, both by increasing the productiveness of individuals and by stimulating the development of new goods and services." It notes that "SUNY has been in the forefront of advances in fields from high energy physics to public health, from veterinary medicine to cosmology. The University is now in the process of linking its campus research and data facilities to those of the statewide high technology and industrial community." It reports that "SUNY campuses are major economic components in both localities and the state as a whole. In addition their research and public service programs make major contributions to the economies of New York State, the United States, and even the world."

In a chapter devoted to Public Service, the SUNY master plan reports "SUNY's official definition" of public service:

> Public service is an organized institutional service, available and accessible, that utilizes educational or research or informational or physical resources of State University — on campus or University-wide — in ways of measurable benefit in improving the quality of life and/or the economic well-being of the people of the State of New York.

It points out that "SUNY is a major partner with business, industry, labor, and state and local governments in efforts to stimulate the New York economy. Through research, education/retraining, and technical assistance, the University will continue to provide services tailored to the needs of a wide range of audiences." The chapter sets forth the types of services now provided, including 58 public service offices, 28 Development Centers for Business, six Small Business Institutes, several Technical Assistance Centers, and 60 Centers for Continuing Education. To ensure that various publics have a voice in "present projects and future directions," mechanisms such as Advisory Boards for the Development Centers for Business have been created.

The SUNY master plan states that, to help increase exports, "SUNY had also begun an Export New York Program to provide technical assistance to firms that sell state products overseas." Finally, the master plan notes that "the University has been working to integrate its technical expertise into a 'knowledge delivery service' to assist business and industry, state and local government, and community agencies. The system is in the process of being strengthened by expansion of on-line, terminal-access services in SUNY libraries."

The SUNY master plan makes two related recommendations which the Regents have approved:

> #11: The University will continue to review its policies such as those on extra service compensation, use of equipment and facilities, continuing education, and patents and copyright, modifying them as necessary to encourage constructive University-industry research partnerships.
>
> #12: The University will continue to apply its instructional, research, and technical assistance resources to public needs, in cooperation with business, industry, labor, state and local government, community agencies, and other sectors of education.

The City University master plan cites "the development of partnerships and alliances between the University and the non-academic community in New York City" as one of the six most important issues to be resolved. According to the master plan, during the next four years, "The University will...expand its ties to the business community in an attempt to accomplish two goals: 1) establish fruitful ties between the University's research programs in technology, the physical and life sciences and the research and development needs of industry; and 2) assure that the University's training programs are compatible with the needs of local industry for a trained workforce."

According to the consolidated master plan for the proprietary sector, "The private degree-granting colleges foster the growth of New York State economy by a commitment to the goals and objectives of career education." It notes that a majority of the institutions in the sector intend to develop their programs further through increased communication with business and industry. It suggests that "The State can foster the partnership between higher education and business/industry by attention to the proliferation of rules and regulations that hinder free enterprise."

In the spring of 1984, the National Science Foundation made four major grants, totalling $15.9 million over five years, for experimental computer science research. Of the four recipients, three were New York institutions: New York University, SUNY Stony Brook, and the University of Rochester.

Among independent institutions, Canisius, Clarkson, Hofstra, NYU, Pace, and RIT all plan to strengthen their computer science offerings; five of them intend to institute new or additional graduate programs in that field. Canisius, Clarkson, and NYU intend also to initiate programs related to the Medical/Biological area, including neuroscience, biotechnology, and biology.

In the area of cooperation with business and industry, New York University mentioned existing collaboration with Grumman, General Electric, IBM, and NASA. St. John's provides internships for communications majors with telecommunications companies. RIT developed the RIT Research Corporation three years ago to bring together faculty expertise and industry needs for research and development; so far, 50 companies have been served in such areas as energy engineering, improvement in printing processes, and graphics reproduction. RIT, the University of Rochester, and the Rochester Area Chamber of Commerce have formed High Technology of Rochester, Inc., to develop a research park. Albany Medical College cited collaborative projects with the Sterling Winthrop Research Institute, on drug evaluation.

Actions

To support New York's economic development, the Regents set forth the following actions to be undertaken by colleges and universities during the period of this Plan:

12-a. Cooperating with Private Industry Councils established under the Job Training Partnership Act and with the Department's Regional Education Centers for Economic Development to support the

training needs of business and industry in the State.

12-b. Increasing their instructional, research, and service activities in the broad technological groups, Electronics/Information and Medical/Biological, in ways appropriate to their missions.

12-c. Building additional connections among themselves and with business, industry, and government agencies, thereby strengthening graduate academic and professional programs and theoretical and applied research.

12-d. Achieving and maintaining excellence, and expanding efforts, at the doctoral level in engineering, computer science, mathematics, and the physical and biological sciences by institutions offering doctoral study in those disciplines.

During the period of this Plan, the Regents and the Department will:

12-e. Continue to support and provide assistance to economic development projects of the New York State Science and Technology Foundation, including the State-supported Centers for Advanced Technology, and promote statewide cooperative projects of the Centers.

RECOMMENDATIONS

12-f. In view of the continued importance in this decade of doctoral study and research in engineering, computer science, mathematics, and the physical and biological sciences, the Regents recommend that the Governor propose to the Legislature the establishment of fellowship and scholarship programs to attract additional numbers of students to full-time doctoral study in those disciplines.

Diversity

The concept of diversity is based upon one of the primary tenets of American education—intellectual freedom. As cherished as the right of free speech is the right of free inquiry, and equally abhorred is the threat of limitation of this freedom and the imposition of a controlled intellectual environment. The existence of a diverse postsecondary education system composed of institutions which support various approaches to intellectual inquiry is one of the surest guarantees of intellectual freedom. Moreover, the existence of a broad variety of institutions stimulates intellectual vitality and permits a student to select from the array the institution and program which meets most fully his or her academic, occupational, and personal needs. The Regents have acknowledged the benefits of such an educational system through their affirmation of the goal of Diversity: "To preserve and foster a diversity of institutions and programs to enable choice related to need, interest, and ability."

Issue 13. Defining and ensuring a diverse system of higher education with options among programs and types of institutions in four strong and autonomous sectors, in support of student choice.

New York State continues to provide its residents with the most extensive choice of postsecondary institutions in the country. It has within its borders the largest number of independent institutions and the first and third largest public university systems in the nation, and a rapidly growing degree-granting proprietary sector. The maintenance of so diverse a system requires that the State concern itself with several critical factors. The maintenance of standards of quality and the development and support of programs of excellence are clearly preeminent concerns. In addition, such factors as the distribution of programs across the sectors, geographic areas, and institutional types, and in each disciplinary area and occupational category, must be considered; each of these has an effect on the maintenance of diversity and student choice.

In terms of enrollment, New York's 250 colleges and universities range in size from New York University, with over 33,000 students, to the Wendell Castle Workshop, with only 25. Thirty-two colleges had over 10,000 students each in the fall of 1983, including 21 public institutions and 11 independent institutions. On the other hand, 88 institutions had fewer than 1,000 students; five were public and 83 were independent or proprietary. One hundred thirty-one focused exclusively on undergraduate education; 26 specialized in education at the graduate or first-professional degree level.

New York's colleges and universities offer almost 15,500 programs of study. Their diversity ranges from independent multiversities and University Centers of State University that offer the widest possible variety of programs of undergraduate, graduate, and professional study, to single-purpose institutions that concentrate on only one or two programs. Several are State, national, or world resources; on the other hand, a large number of public and independent colleges serve specific localities (such as community colleges) or regions (The City University of New York, for example).

To what extent does this diversity support choice for students? In order to respond to that question, it is necessary to examine in detail the level of opportunity that exists for residents of all parts of the State to study a discipline and the levels of access that exist to different types of institutions (i.e., large or small; public, independent, or proprietary; urban or rural; liberal arts or technical/professional; broad in scope of programs or specialized). Key to such an examination are questions of student demand and of adequate resources and cost.

The Regents now examine student demand and both cost and the availability of resources, among other factors, in evaluating proposals by institutions for master plan amendments. It is possible, for example, that a limited number of programs in a discipline may suffice to meet student demand; in other disciplines, student demand may exceed the capacity of all existing programs. Availability of resources may serve to place limits on choice; for example, in some disciplines the availability of essential external resources such as clinical facilities may affect higher education's ability to mount programs.

In reviewing proposed master plan amendments, the Regents will continue to consider these elements. However, there is a need to examine them more broadly than in such a case-by-case context. Clearly, such a detailed review is beyond the scope of the Statewide Plan or, indeed, any single document. What is needed is a series of studies of diversity that examine options among programs and types of institutions both statewide and by region. During the period of this Plan, the Regents intend to issue such studies. They will examine in detail the access to institutions and programs that exists in each region of the State, together with any constraints that may apply. Tables 27 through 30, below,

Table 27

NEW YORK STATE
NUMBER OF PROGRAMS OFFERED TOWARD ASSOCIATE DEGREE BY MAJOR PROGRAM AREA, REGENTS REGION AND INSTITUTIONAL CATEGORY

	REGENTS REGION																	
	WESTERN		GENESEE VALLEY		CENTRAL		NORTHERN		NORTHEAST		MID-HUDSON		NEW YORK CITY		LONG ISLAND		NEW YORK STATE	
PROGRAM	PUB*	NON-PUB**	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB
Business & Commerce Technologies	43	57	44	46	37	43	18	7	106	34	59	43	71	88	56	22	454	340
Data Processing Technologies	16	6	9	6	13	2	3	0	16	2	11	4	14	7	6	0	88	27
Health Services & Paramedical	20	9	12	6	24	5	7	1	21	8	26	4	34	18	19	0	163	51
Mechanical & Engineering	63	3	17	20	49	1	9	1	62	0	24	1	27	25	19	2	270	53
Natural Science Technologies	18	2	5	2	29	1	10	4	33	0	12	2	8	2	16	1	131	14
Public Service Related Technologies	20	10	10	4	20	11	3	8	36	4	26	5	20	16	33	3	168	61
Pre-baccalaureate Liberal Arts	32	15	17	14	30	11	13	2	79	14	31	24	29	29	23	12	295	121

*Public includes SUNY and CUNY
**Non-public includes independent and proprietary

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 28

NEW YORK STATE

NUMBER OF PROGRAMS OFFERED TOWARD A BACHELOR'S DEGREE BY MAJOR PROGRAM AREA, REGENTS REGION AND INSTITUTIONAL CATEGORY

REGENTS REGION

	WESTERN		GENESEE VALLEY		CENTRAL		NORTHERN		NORTHEAST		MID-HUDSON		NEW YORK CITY		LONG ISLAND		NEW YORK STATE	
PROGRAM	PUB*	NON-PUB**	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB
Agriculture & Natural Resources	0	0	0	0	20	1	0	0	0	0	0	1	0	1	0	1	20	4
Architecture & Environmental Design	2	0	0	1	5	8	0	0	0	3	0	0	3	14	0	3	10	29
Area Studies	3	0	3	8	9	19	0	0	14	7	3	13	21	31	2	9	55	87
Biological Sciences	12	22	9	30	36	21	2	5	15	25	8	35	25	56	6	33	113	227
Business & Management	4	31	3	29	11	28	1	6	22	31	1	57	23	89	4	39	69	310
Communication	3	4	2	6	2	17	0	1	0	5	0	10	6	18	0	15	13	76
Computer & Information Sciences	4	9	3	11	5	13	1	1	10	7	2	15	11	30	3	10	39	96
Education	32	45	14	30	53	34	7	2	18	21	11	83	78	122	5	53	218	391
Engineering	16	0	7	17	11	21	0	5	3	16	0	11	10	65	3	33	50	168
Fine & Applied Arts	27	20	16	50	23	69	16	3	15	21	24	47	47	110	7	44	175	364
Foreign Languages	23	34	11	58	43	63	4	7	41	33	10	77	91	147	11	43	235	462
Health Professions	9	11	5	20	10	8	1	0	10	13	1	19	31	49	5	18	72	138
Home Economics	4	0	0	2	7	13	0	0	5	0	0	2	12	12	0	1	28	30
Letters	14	32	15	47	27	55	4	6	23	37	9	74	58	101	6	34	156	386
Library Science	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	1	2
Mathematics	12	15	6	31	20	22	3	4	14	16	6	45	29	71	4	19	94	323
Physical Sciences	28	31	26	51	65	48	6	9	30	27	15	34	66	99	15	44	251	343
Psychology	4	10	3	11	8	11	1	2	7	12	3	29	16	31	4	10	46	116
Public Affairs	3	8	4	9	5	4	0	0	12	15	0	20	13	23	2	10	39	89
Social Sciences	31	38	25	65	58	62	7	13	47	63	24	112	88	168	14	68	294	589
Theology	0	3	0	2	0	0	0	0	0	1	0	5	0	2	0	0	0	13
Interdisciplinary Studies	17	21	3	26	13	19	2	13	16	18	6	35	18	68	3	30	77	230

*Public includes SUNY and CUNY

**Non-public includes independent and proprietary

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 29

NEW YORK STATE
NUMBER OF PROGRAMS OFFERED TOWARD A MASTER'S DEGREE BY MAJOR PROGRAM AREA, REGENTS REGION AND INSTITUTIONAL CATEGORY

	REGENTS REGION																	
	WESTERN		GENESEE VALLEY		CENTRAL		NORTHERN		NORTHEAST		MID-HUDSON		NEW YORK CITY		LONG ISLAND		NEW YORK STATE	
PROGRAM	PUB*	NON-PUB**	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB
Agriculture & Natural Resources	0	0	0	0	30	10	0	0	0	0	0	0	0	0	0	0	30	10
Architecture & Environmental Design	2	0	0	0	11	9	0	0	1	3	0	0	1	25	0	0	15	37
Area Studies	1	0	0	0	2	3	0	0	1	1	0	0	3	16	0	0	7	20
Biological Sciences	16	7	4	16	78	22	2	0	5	12	3	20	18	59	2	11	128	147
Business & Management	2	3	0	9	10	33	0	4	6	14	0	62	21	93	0	36	39	254
Communications	1	0	0	2	2	23	0	1	0	2	0	3	5	17	0	2	8	50
Computer & Information Sciences	1	0	0	4	0	8	0	1	1	2	1	9	8	11	1	6	12	41
Education	43	26	16	36	74	52	12	4	27	24	13	40	72	258	0	69	257	509
Engineering	18	0	0	11	19	54	0	9	0	31	0	11	6	44	3	21	46	181
Fine & Applied Arts	10	0	1	28	8	52	6	0	4	1	11	12	25	71	5	7	70	171
Foreign Languages	9	3	2	7	9	29	4	0	14	0	3	10	17	59	3	17	61	125
Health Professions	11	1	2	7	3	8	0	0	1	14	0	27	20	54	3	12	40	123
Home Economics	2	0	0	0	17	17	0	0	1	0	0	1	6	8	0	0	26	26
Law	0	0	0	0	0	4	0	0	0	0	0	0	0	10	0	0	0	14
Letters	12	12	7	11	18	43	2	0	9	3	3	8	28	55	4	15	83	147
Library Science	1	0	1	0	0	2	0	0	1	0	0	0	1	6	0	1	4	9
Mathematics	7	3	4	8	11	9	2	1	4	4	2	5	12	19	2	11	44	60
Military Sciences	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Physical Sciences	18	7	7	8	31	39	4	2	12	6	7	7	23	53	3	21	105	143
Psychology	1	1	2	1	24	23	0	0	2	3	1	6	8	21	1	6	39	61
Public Affairs & Services	4	3	2	4	2	7	0	0	7	2	0	10	4	31	1	14	20	71
Social Sciences	11	8	6	8	33	44	2	0	15	5	1	7	33	83	6	21	107	176
Theology	0	3	0	2	0	0	0	0	0	1	0	7	0	18	0	2	0	33
Interdisciplinary Studies	8	0	1	10	1	2	0	2	2	4	0	4	6	12	2	6	20	40

*Public includes SUNY and CUNY

**Non-public includes independent and proprietary

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 30

NEW YORK STATE
NUMBER OF PROGRAMS OFFERED TOWARD DOCTORAL DEGREES BY MAJOR PROGRAM AREA, REGENTS REGION AND INSTITUTIONAL CATEGORY

	REGENTS REGION																	
	WESTERN		GENESEE VALLEY		CENTRAL		NORTHERN		NORTHEAST		MID-HUDSON		NEW YORK CITY		LONG ISLAND		NEW YORK STATE	
PROGRAM	PUB*	NON-PUB**	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB	PUB	NON-PUB
Agriculture	0	0	0	0	26	7	0	0	0	0	0	0	0	0	0	0	26	7
Architecture & Environmental Design	0	0	0	0	0	5	0	0	0	0	0	0	0	2	0	0	0	7
Area Studies	0	0	0	0	0	1	0	0	0	0	0	0	0	11	0	0	0	12
Biological Sciences	10	1	0	14	65	20	0	0	1	9	0	6	11	45	1	0	88	95
Business & Management	1	0	0	1	6	24	0	0	0	3	0	0	1	11	0	0	8	39
Communications	2	0	0	0	0	1	0	0	0	1	0	0	0	4	0	0	2	6
Computer & Information Sciences	1	0	0	1	0	6	0	0	1	1	0	0	0	2	0	1	2	11
Education	24	0	0	12	50	69	0	0	8	0	0	0	2	189	0	7	84	277
Engineering	9	0	0	6	16	40	0	2	0	27	0	0	1	42	3	20	29	137
Fine & Applied Arts	3	0	0	6	2	8	0	0	0	0	0	0	3	37	2	0	10	51
Foreign Languages	11	0	0	1	5	21	0	0	3	0	0	0	3	40	3	0	25	62
Health Professions	3	0	0	1	2	4	0	0	0	0	0	0	3	20	1	2	9	27
Home Economics	0	0	0	0	6	3	0	0	0	0	0	0	0	12	0	0	6	15
Law	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	3
Letters	7	0	0	4	4	30	0	0	4	0	0	0	4	44	2	0	21	78
Library Science	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Mathematics	4	0	0	2	3	4	0	1	1	1	0	0	1	16	2	3	11	27
Physical Sciences	7	0	0	5	7	29	0	2	5	3	0	0	4	27	4	7	27	73
Psychology	4	0	0	4	12	11	0	0	2	0	0	0	11	43	1	8	30	66
Public Affairs	2	0	2	4	0	2	0	0	3	0	0	0	2	19	0	2	9	27
Social Sciences	8	0	0	5	17	36	0	0	6	1	0	0	5	57	5	0	41	99
Theology	0	0	0	2	0	0	0	0	0	0	0	0	0	9	0	0	0	11
Interdisciplinary Studies	3	0	0	1	1	3	0	0	0	0	0	0	0	10	0	0	4	14

*Public includes SUNY and CUNY

**Non-public includes independent and proprietary

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

provide illustrations of some of the information that will be examined in those studies.

Actions

In support of Objective 9 from the Regents 1980 Plan, "In 1990 New York State will continue to have a balanced system of higher education with four strong and autonomous sectors — State University, City University, the independent sector, and the proprietary sector — coordinated through the master planning process," with State University, City University, and the independent sector each including a mixture of open-admission and selective institutions at the undergraduate level, during the period of this Plan, the Regents and the Department will:

13-a. Review proposed master plan amendments against criteria of maintaining diversity.

13-b. Issue annually a report on the diversity of postsecondary education in New York State that includes information on the ranges of access to programs and types of institutions, regionally and statewide.

13-c. Recommend allocations of funds as indicated under the Goal of "Effective Use of Resources" to help maintain diversity.

Effective Use of Resources

For the past several years, higher education has been continuously advised to prepare itself for declines in enrollment, in dollars, in faculty, in Federal support, and in the generally supportive environment which had encouraged expansion and experimentation a decade and more ago. In most of these categories, predictions for reductions or restricted growth have been fulfilled in New York State — except for the projected decline in enrollment. While demographic evidence points clearly in that direction, our postsecondary institutions have been exceptionally successful in extending their services to new clienteles, and at least postponing — and perhaps diminishing — the projected decline.

Nevertheless, the economic situation in the State is one of delicate balance. While there is evidence of some recovery, the outlook is but cautiously optimistic and the need to manage public funds judiciously is clearly evident. In this context, the Regents and other educational leaders are acutely conscious of the need to manage the resources devoted to higher education as creatively and responsibly as possible. New clienteles, advancing technology, and pressing social issues all present challenges which colleges and universities strive to address, yet their efforts must be fashioned within an economic environment of restraint. The issues related to resources deal with the definition and control of this environment.

Issue 14. Exploring how changes in State policy with regard to student financial aid, tuition levels, and institutional aid would influence the effective use of resources.

Those who develop educational policy must concern themselves with the equitable distribution of public funds to support, in the most effective way possible, the excellence of our postsecondary system. The critical factors here are the provision of sufficient support to institutions to enable them to maintain quality and enhance excellence, and thus retain their attractiveness to students; the provision of sufficient support to students to enable them to select a college with as little inhibition as possible from excessive financial restraints; and the allocation of State funds to support these two purposes in the most effective way possible.

In 1982-83, New York's public, independent, and proprietary degree-granting institutions received over $6.3 billion in unrestricted revenues. New York State was the source of about 35 percent of those revenues (including student aid).

The maintenance of our system of postsecondary education must be based upon policies which provide adequately and equitably for institutional support across the sectors and for financial aid to students across income categories where need is demonstrated. The problems in determining the effectiveness of policies to allocate State funds to these purposes are, of course, related to the very difficult proposition of defining "adequate and equitable" support for sectors and students. This is a perpetual challenge for educators and policymakers, because the definitions of adequacy and equitability can never be constant. They are dependent upon such shifting elements as the State's economy and demographics, student interests, employers' needs, provision of educational opportunity to new constituencies, the advancement of knowledge and the assimilation of these advances into the curriculum, and increasingly, maintenance of aging physical facilities. Further, because higher education is itself continuously examining and redefining the contributions it can and must make to improve the human condition, there can be no final determination of an allocation process which guarantees the most effective use of resources. At this point, at least, discussions of the effective use of resources must center upon an assessment of certain indicators which examine changes in the relative level of support for institutions and students, and the possible effect of these changes on each sector's ability to maintain standards of excellence and attractiveness to students.

Based upon currently available data sources, those factors which provide the most informative insight into the issues of adequate and equitable support for a diverse postsecondary system are (a) net cost of student attendance, and (b) sector fiscal indicators.

Action

During the period of this Plan, the Regents and the Department will:

14-a. **Issue annually a report on postsecondary education summarizing and analyzing standardized educational statistics on education costs from a newly developed and generally accepted data base. Use the**

analysis for the purpose of informing discussion on policies to promote the most effective use of the State's resources for postsecondary education, and making recommendations on allocation of State resources.

Net Cost of Student Attendance as an Indicator of Effective Use of Resources

One significant factor in the selection of a college is the cost of attendance. Cost is comprised of charges for tuition and fees, books, perhaps room and board, and other incidentals. For a significant proportion of the college students in New York State, student aid in some form or another affects a portion of this cost. Depending upon the student's need and the aid available, the student's choice of institution is extended or narrowed. Because it may be a critical factor influencing institutional choices, the student aid system becomes an important element in the provision of equal educational opportunity. Only an analysis of information related to the distribution of student aid can provide insight, albeit limited, into the effectiveness of policies to enhance access and educational opportunity through student aid.

The purpose of our inquiry into this topic is not to depict the actual functioning of the student aid system nor to portray the awards which actually may be made to a "typical" student; rather it is to examine in very broad and hypothetical terms the effect which student aid may have on student choice and, hence, access to educational opportunity. The premise from which this inquiry starts is that access *may* be affected by changes in the proportion of the cost of attendance offset by student aid.

In order to establish some approach to examining how effective use of resources can enhance the student aid system, the Education Department, with the advice of an intersector technical advisory committee, has begun the development of the student support sources model, which simulates some possible distributions of aid to a hypothetical student attending various categories of institutions. Tables 48-53 (at the end of this chapter) illustrate the type of data generated by this model, and the Net Cost of Student Attendance paper contained in Appendix B gives a technical explanation of the construct and functioning of this simulation. A cautionary note is in order on the interpretation of the figures contained in Tables 48-53. It is important to note that this simulation is still under development; some matters related to the manipulation and display of the data and to the expansion of the model to include other categories of students remain to be resolved. Of paramount importance to the usefulness of this simulation is the accumulation of several years of data to permit the identification of trends in student aid distribution. The current edition does not yet have that multiple year data capacity. Therefore, the use of the simulation at this time is restricted; however, we expect that it will be fully functional in the near future.

Among the significant data problems encountered in constructing any simulation to examine student aid is the lack of a single common source for the collection of standardized information on all student aid programs. There exist a variety of student aid programs at the Federal, State, and institutional levels, each of which requires unique information and all of which are evaluated and awarded according to the insight of a variety of processes. Because of this lack of coordination, the State lacks information on how the Federal programs contribute to access, particularly with respect to family incomes; the relationship between grants, loans, and part-time employment; the distribution of institutional and campus-based aid; and the extent to which aid meets total expenses.

The information set forth in Tables 48-53 depicts one possible pattern of student aid distribution to a hypothetical resident of New York State who is a full-time undergraduate, dependent student from a family of four, the only member of that family currently enrolled in college. In each case, the student's family has no nontaxable income and has no more than $10,000 in assets. This student is placed in four different family income levels at six categories of institutions. The information available on the awarding of TAP and Pell grants and on expectations for family contribution permit a fairly straightforward depiction of these amounts. Far less is known about the distribution of campus-based and institutional aid across income categories, and here we have included several alternatives which depict a few of the many possible distributions of this aid. Similarly, some latitude may be taken with the use of Guaranteed Student Loan information. Some may wish to include it as a cost, albeit deferred, as it is depicted in this simulation. Those who consider GSL to be aid may suppress that part of the equation in their calculations. It should also be noted that loans are not likely to be available for relatively small amounts. Above all, it should be recalled that this simulation presents a hypothetical depiction of the allocation of student aid across sectors and income levels for one category of student. (A complete set of 13 tables is included in the Net Cost of Student Attendance issue paper in Appendix B.) It is not a presentation of actual distribution, but rather a portrayal of some of the ways in which variations in the distribution of student aid may affect choice.

For example, in reviewing the data set forth in the illustrative Tables 48-53, it is possible to discern for various categories of institutions, the total cost of attendance, and for our hypothetical student, a variety of ways in which that cost may be met in a range of income categories. The cost which remains to be met after Pell and TAP formula aid is applied to our case student is displayed, as are a few of the many alternatives for using non-formula aid, that is campus-based and institutional aid. The effect of the Guaranteed Student Loan is also indicated. Based upon the scenario followed for "packaging" the available aid, the cost to the hypothetical student and his or her family for attending college can be approximated in broad, generalized terms, not in figures which depict actual cases. The figures for 1981-82 provide a base for our calculations; however, with the establishment of a multi-year data base it will become possible to identify trends in the net cost of attendance and to determine their bearing on the effective use of resources.

Fiscal Information as an Indicator of the Effective Use of Resources

Another component to be considered when analyzing the effective use of resources in support of the postsecondary system is fiscal information. Such information is presented here for information and as a basis for further analysis. The Fiscal Glossary at the end of this chapter provides a useful reference for the meaning of technical terms.

The tables presented here can be divided into two groups. The first set of tables (Tables 31-34) shows revenues and expenditures, with an emphasis on State support. The second set (Tables 35-39) provides basic data on cost per student for such items as instruction and student-related educational and general expenditures, as well as the relationship among fiscal components, such as the portion of instructional costs covered by tuition and fees revenues, which can be used in various contexts. Individually and as a group, these nine tables provide useful information on fiscal trends; comparisons across sectors should, however, be avoided, because of wide variations within individual sectors caused by differences in the amount of graduate work, existence of medical and dental schools, and other factors which affect average cost. Work is currently under way to isolate groups of comparable institutions within the various sectors in order to permit cross-sector comparisons in the future. It is legitimate, however, to compare the rate of change across sectors, since the mix of institutional types within each sector remained relatively constant over these five years. Thus, even if one sector began with higher costs than another it is still valid to determine whether costs rose significantly faster or slower in that sector than in the others.

State Support to Postsecondary Education

These first four tables provide a general overview of State support to postsecondary education. Table 31 shows State support over five years (1978-79 — 1982-83) in total dollars, and as a proportion of total State revenues. Table 32 looks only at State funds which go directly to either postsecondary institutions or students, excluding administrative costs of other State agencies. State funds are divided into student and institutional aid. Where student aid programs were funded through institutions (such as tuition waivers at SUNY and CUNY), these funds were subtracted from institutional aid shown in Table 31 and added to the student aid category in Table 32. Data are shown by sector for the first and last years of the five-year period ending 1982-83. The percent change in funding over the five years is shown, along with corresponding changes in the Higher Education Price Index (HEPI). In addition, the share of student or institutional aid received by each sector in each of the two years is shown. Finally, the table shows the total share of State funds provided in student versus institutional aid at the beginning and end of this period.

Table 33 follows the same format as Table 32, except that student and institutional aid are combined. Similarly, the share of State support to postsecondary education received by each sector in each of the two years is displayed. Table 34 shows shares of unrestricted revenues from all sources. Unrestricted funds are used instead of total current funds revenues in order to focus on only those funds which can be allocated at the discretion of the institution.

In the following pages, brief explanatory notes introduce each table. One important caveat should be noted: the tables contain a mixture of revenue and expenditure data from the HEDS/HEGIS system, supplemented by appropriations data for items not included in the HEDS/HEGIS system.

Overview of State Support to Postsecondary Education

Table 31

State Support for Postsecondary Education

- Overall State support to postsecondary education rose from $1,530 million to $2,269 million, an increase of 48.3 percent. By comparison, total New York State revenues increased 44.0 percent, and the Higher Education Price Index increased 42.3 percent.
- The State's assumption of the full cost of CUNY's senior colleges during this period accounted for nearly one-third of the increase. Had the State's share of CUNY's costs remained unchanged, the total State dollars to postsecondary education would have risen only 34 percent instead of 48.2 percent, less than the 44 percent increase in State revenues.
- If the State's share of the cost of CUNY's senior colleges had not increased during this period, postsecondary education would have received 12.4 percent of total State revenues in 1982-83, a decrease from the 1978-79 level of 13.2 percent.

More detailed data can be found in Appendix E.

Table 31

STATE SUPPORT FOR POSTSECONDARY EDUCATION AS A PERCENT OF TOTAL STATE REVENUES

($ Millions)

	1978-79	1979-80	1980-81	1981-82	1982-83	Change 1978-79 to 1982-83	
						($)	(%)
Total Postsecondary Education (1,2)	$1,530	$1,681	$1,770	$2,053	$2,269	$ 739	48.3%
Total NYS Revenues	11,555	12,765	13,966	15,856	16,645	5,090	44.0%
State Support to Postsecondary Education as a Percent of Total State Revenues	13.2%	13.2%	12.7%	12.9%	13.6%		

1. SUNY State-Operated, State funding of CUNY Senior, Community Colleges, Independent Sector, Degree-Granting Proprietary Institutions, Non-Degree-Granting Institutions, State Agencies (State Education Department, HESC, Other)

2. Data reflect State takeover of CUNY Senior Colleges during this period.

NOTE: Data consist of combined appropriation and expenditure data. See glossary. See Appendix E for more detailed data.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 32

Total State Funds to Postsecondary Education by Sector
(Student Aid versus Institutional Aid)

In this table, "student aid" includes all identifiable State-funded student aid programs, including TAP, Regents Scholarships and Fellowships, appropriate segments of programs for the disadvantaged, college work-study matching funds for the public and independent institutions, SUSTA, CUSTA, and tuition waivers at SUNY and CUNY, regardless of whether the monies are provided directly to the student or to the institution. Additional data can be found in Appendix E.

Student Aid:

— State-supported student aid increased an average of 30.2 percent from 1978-79 to 1982-83, from $277 million to $362 million, compared to a 42.3 percent increase in higher education prices in general.

— There were large variations in the rate of change in State-funded student aid received by the sectors, with increases ranging from 12.5 to 180 percent. The change in the amount of State student aid received by the public and independent sectors was below the average, while the "Proprietary and Other" sector rose six times as fast as the statewide average.

Institutional Aid:

— On a statewide basis, institutional aid rose faster than student aid (51.9 percent versus 30.2 percent). Institutional aid rose faster than the 42.3 percent increase in the HEPI, while student aid lagged well behind the HEPI. Had the State continued to support CUNY senior colleges at the 50 percent level, total institutional aid would have risen only 34 percent, a rate below the change in the HEPI.

— Changes in institutional aid were relatively consistent across the sectors, with the exception of CUNY senior colleges (because of the State takeover of funding).

General Observations:

— From 1978-79 to 1982-83, the share of total State support for postsecondary education allocated to student aid decreased from 18.4 to 16.2 percent of total State funds, while institutional aid increased from 81.6 to 83.8 percent. Had the State continued to support CUNY senior colleges at the 1978-79 rate, these changes would have been considerably altered, with student aid decreasing only to 18 percent, and institutional aid rising to only 82 percent.

— In 1978-79 the State spent an average of $2,092 per FTE student in combined student and institutional aid. In 1982-83 that figure rose to $2,937, a 40.4 percent increase in expenditures, somewhat behind the 42.3 percent increase in the Higher Education Price Index.

Table 32

STATE FUNDS TO POSTSECONDARY EDUCATION STUDENT AID AND INSTITUTIONAL AID BY SECTOR (1)

1978-79 TO 1982-83

($ Millions)

	1978-79	1982-83	5-Yr Chg (%)	Share of State Support 1978-79	Share of State Support 1982-83
STUDENT AID (2)					
SUNY State-Operated	$ 56	$ 65	16.1%	20.1%	18.0%
CUNY Senior Colleges	40	45	12.5%	14.4%	12.4%
Community Colleges	43	49	14.0%	15.5%	13.5%
Independent	119	147	23.5%	42.8%	40.6%
Proprietary & Other (3)	20	56	180.0%	7.2%	18.5%
TOTAL (6)	$ 277	$ 362	30.2%	100.0%	100.0%
INSTITUTIONAL AID (4)					
SUNY State-Operated	$ 770	$1,083	40.6%	62.5%	57.7%
CUNY Senior Colleges (5)	202	440	117.7%	16.4%	23.5%
Community Colleges	173	234	35.3%	14.0%	12.5%
Independent	87	117	34.5%	7.1%	6.2%
Proprietary & Other (3)	0	0	n/a	0%	0%
TOTAL (6)	$1,232	$1,874	51.9%	100.0%	100.0%
Total Student Aid	$ 278	$ 362	30.2%	18.4%	16.2%
Total Institutional Aid	1,232	1,870	51.9%	81.6%	83.8%
ALL STATE FUNDS:	$1,510	$2,232	47.9%	100.0%	100.0%
Higher Education Price Index	168.7	240.1	42.3%		

1. See glossary for explanation of definitions and methods.
2. Student Aid represents all identifiable State funds for student aid, whether paid directly to students or channelled through the institution.
3. Includes non-degree-granting institutions.
4. Includes debt service for CUNY senior colleges and community colleges as well as SUNY community colleges.
5. Data reflect State takeover of CUNY senior colleges during this period.
6. Totals may not add due to rounding.

NOTE: Figures will not match Table 31 since funds for State agencies and State Guaranteed Student Loans are excluded.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 33

Total State Funds to Postsecondary Education by Sector
(Institutional and Student Aid Combined)

This table combines institutional and student aid to postsecondary education shown in Table 32. It will not match the figures in Table 31, since funds for State agencies and certain programs are not included.

— Total State funds to higher education increased slightly faster than the HEPI (47.9 percent versus 42.3 percent).

— Changes in State funding varied considerably, from a low of 26.8 percent to a high of 180 percent over the five-year period. The largest percent increase (180 percent) occurred for the proprietary and other institutions, followed by CUNY senior colleges (100 percent). The latter, of course, reflects the State takeover of funding. All other sectors increased at rates below the 42.3 percent change in the HEPI: 39 percent (SUNY State-operated), 31 percent (community colleges), and 26.8 percent (independent sector).

— There were some shifts in the shares of State support over this period, due in large part to the State takeover of CUNY, which led to an increase in the proportion of State funds to CUNY from 16 to 21.7 percent. The shares of State support to all other sectors declined over the period, with the exception of the proprietary and other sector, whose share rose from 1.3 to 2.5 percent.

Table 33

STATE FUNDS TO POSTSECONDARY EDUCATION
TOTAL STUDENT AND INSTITUTIONAL AID BY SECTOR (1)
1978-79 TO 1982-83
($ Millions)

	1978-79	1982-83	5-Yr Pct Change	Share of State Support to Higher Ed. 1978-79	Share of State Support to Higher Ed. 1982-83
SUNY State-Operated	$ 826	$1,148	39.0%	54.7%	51.4%
CUNY Senior Colleges (2)	242	485	100.3%	16.0%	21.7%
Community Colleges	216	283	31.0%	14.3%	12.7%
Independent	206	261	26.8%	13.6%	11.7%
Proprietary & Other (3)	20	56	180.0%	1.3%	2.5%
STATE TOTAL	$1,510	2,232	47.9%	100.0%	100.0%
Higher Education Price Index	168.7	240.1	42.3%		

1. See glossary for explanation of definitions and methods.
2. Data reflects State takeover of funding of CUNY senior colleges during this period.
3. Includes non-degree-granting institutions.

NOTE: Figures will not match Table 31 since funds for State agencies are excluded.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 34

Share of Unrestricted Revenue from Each Revenue Source by Sector, FYE 1979 and 1983

This table shows unrestricted revenues from all sources. It includes funding for the costs of debt service at SUNY and CUNY community colleges as well as at CUNY senior colleges. Although it could be argued that such funds are for a restricted purpose, debt service costs have been included in order to provide comparability with SUNY State-operated campuses. Dollar values are shown in Appendix E.

— On a statewide basis, the two most significant sources of unrestricted revenues are tuition and fees (accounting for over one-third of all unrestricted revenues) and State funding, which provided almost 30 percent. The third largest source of unrestricted revenues (about one-fifth of the total) was "all other sources," which is composed of such items as auxiliary enterprises, hospitals, and independent operations.

— Statewide, there were only minor shifts in sources of support from 1978-79 to 1982-83.

— Tuition and fees accounted for substantially less of unrestricted revenues at CUNY senior colleges in 1982-83 than in 1978-79 (20.1 versus 25.2 percent). The State takeover of funding is reflected in the decline in support from local revenues (from 21.8 to 3.6 percent) and an increase in funds from the State (51.3 percent to 74.1 percent of total unrestricted revenues).

— Community colleges receive nearly all their revenues from three sources: tuition and fees, State funds, and local contributions, in roughly equal amounts.

— Tuition and fees account for just over half of all unrestricted revenues in the independent sector, with another quarter coming from "all other sources."

— In the proprietary and other sector, tuition and fees revenues produce over 90 percent of all unrestricted revenues.

Table 34

SHARE OF UNRESTRICTED REVENUE FROM EACH REVENUE SOURCE BY SECTOR FISCAL YEAR ENDING 1979 AND 1983 (1)

	New York State		SUNY State-Operated		CUNY Senior(2,3)		Combined CC(3,4)		Independent		Proprietary	
	1979 %	1983 %	1979 %	1983 %	1979 %	1983 %	1979 %	1983 %	1979 %	1983 %	1979 %	1983 %
Tuition and Fees	36.6%	37.6%	13.8%	13.1%	25.2%	20.7%	25.4%	27.3%	52.4%	53.0%	90.8%	91.9%
Federal	2.7	2.6	0.7	1.1	0.7	0.6	0.4	0.3	4.8	4.2	0	0
State	29.8	28.6	68.3	63.5	51.3	74.1	37.9	34.4	3.9	3.5	0	0
Local	5.8	3.7	0	0	21.8	3.6	31.2	30.8	0.3	0.3	0	0
Private Gifts & Contracts	2.1	3.1	0	0.2	0	0.2	0	0.1	4.2	5.6	0	0
Endowment Income	2.1	2.2	0	0.1	0	0	0	0	4.2	4.2	0	0
Educational Activities	1.1	1.1	0.8	0.7	0.3	0	0.2	0.1	1.6	1.7	0.1	1.8
All Other Sources(5)	19.7	21.2	16.3	21.3	0.5	0.8	5.0	7.0	28.7	27.6	9.1	6.2
TOTAL (%)(6)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total ($ millions)	$4,142	$6,368	$1,122	$1,611	$ 407	$ 603	$ 462	$ 671	$2,108	$3,406	$ 43	$ 76

1. Preliminary data; dollar values shown in Appendix E.
2. Graduate Center, 4-Year Colleges, and a portion of Central Administration, and NYC Technical College.
3. Includes debt service.
4. Includes portion of Central Administration.
5. Includes auxiliary enterprises, hospitals, and independent operations.
6. Numbers may not add due to rounding.

Source: NYSED, Bureau of Finance and Facilities Studies, 1984.

Selected Revenue and Expenditure Data

The following tables display a sample of selected revenue and expenditure data for each sector. These data serve to provide a baseline for understanding the dependence of sectors on tuition and fees as a source of revenues, as well as showing per student expenditures for certain major components of educational costs. It is expected that these types of data will provide a useful context for the analysis of a variety of general and specific policy issues, for example, changes in the net cost of attendance.

Data are provided separately for each of the sectors — SUNY State-operated campuses, CUNY senior colleges, community colleges (SUNY and CUNY combined), independent institutions, and degree-granting proprietary institutions — so that trends within each sector can be examined. Because of the wide variation in institutions within each of the sectors, in terms of absolute size, proportion of graduate students, significance of summer session and non-degree courses, as well as the mix of program offerings, cross-sector comparisons are not particularly meaningful, with the exception of trend data. The Department is currently working on putting together selected groups of institutions within the various sectors in order to permit such cross-sector comparisons. Data on interim years, as well as separate figures for SUNY and CUNY community colleges, can be found in Appendix E.

Tuition and fees revenues per student represents the most global measure of student-derived income. It includes tuition and fees received from all students — graduate as well as undergraduate, summer session as well as the academic year, non-credit as well as credit. This income is then divided by the total number of full-time equivalent (FTE) students, which is based on the number of full-and part-time degree students, excluding summer session.

By comparison, the *weighted undergraduate tuition and fee rate* is a narrower measure, representing the cost to full-time undergraduate students. The differences in these two measures of student revenues depend, then, on the proportion of graduate students and the magnitude of non-credit and summer session instruction.

By comparing the change in tuition and fees revenues per FTE student over the five-year period with the change in the *Higher Education Price Index*, which measures changes in the "market basket" of costs to institutions of higher education, it can be seen whether student-generated revenues have kept up with the trends in institutional costs nationwide. Similarly, comparison of changes in the weighted undergraduate tuition and fee rate with the *Consumer Price Index* shows whether the costs to students as consumers have risen faster or slower than other consumer goods.

Student-related educational and general expenditures represents those costs directly related to the education of the student. The major component of student-related educational and general expenditures is the cost of *instruction*. The remainder, the *non-instructional student related E&G costs*, are composed of items such as student services, academic support, institutional support, and the operation and maintenance of the educational plant. These figures indicate how much student-related expenditures have risen compared to higher education prices in general, as well as the proportions spent on instruction and non-instructional items.

It should be noted that *student-related E&G* is a measure developed by the Department to provide comprehensive and consistent comparisons of student-related costs across institutional types and sectors. Student-related E&G is calculated differently from other measures of educational and general expenditures, such as that used in the Executive Budget. For example, unlike "education and general cost" shown in the Executive Budget, the Department's calculations include fringe benefits. In addition, FTE students in these tables reflect the Department's standard definition, which differs from the various methods used by SUNY, CUNY, and institutions in the independent sector.

The fiscal glossary at the end of this chapter contains more complete definitions of these and other variables used in this section.

Tuition and fees revenues as a percent of student-related expenditures indicates both how much of student-related expenditures is covered by student revenues and how that proportion changed over the five-year period. Similarly, *tuition and fees revenues as a* percent of instructional cost indicates how much of instructional costs is covered by student revenues.

The TAP program is the most significant source of State student aid support. *TAP as a percent of tuition and fees revenues* indicates what portion of tuition and fees revenues to the institution is provided from the Tuition Assistance Program.

Finally, enrollment of *full-time equivalent students* is shown, along with the five-year change, to provide an indicator of how enrollment changes may have influenced costs per student.

Table 35

SELECTED REVENUE AND EXPENDITURE DATA*
SUNY STATE-OPERATED CAMPUSES

	1978-79	1982-83	5-Yr. Chg.
COST PER FTE STUDENT:			
Educational and General	$ 4,422	$ 6,018	36.1%
Instructional	2,659	3,640	36.9%
Non-Instructional	1,763	2,378	34.9%
TUITION AND FEES:			
Revenues per FTE Student	$ 980	$ 1,287	31.3%
Avg. full-time undergrad. rate	904	1,251	38.4%
TUITION AND FEE REV. AS A PCT OF:			
Educational and General Cost	22.2%	21.4%	
Instructional Cost	36.9%	35.4%	
TAP AS A PERCENT OF TUITION AND FEES REVENUES:	20.4%	18.5%	
STANDARD COST INDICES			
Higher Education Price Index			42.3%
Consumer Price Index			43.3%
ENROLLMENT:			
Full-Time Equivalent Students	158,300	164,600	4.0%

*See glossary for explanation of definitions and methods.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 36

SELECTED REVENUE AND EXPENDITURE DATA*
CUNY SENIOR COLLEGES

	1978-79	1982-83	5-Yr. Chg.
COST PER FTE STUDENT:			
Educational and General	$ 3,355	$ 5,833	73.9%
Instructional	2,326	3,571	53.5%
Non-Instructional	1,029	2,262	119.8%
TUITION AND FEES:			
Revenues per FTE Student	$ 1,028	$ 1,360	32.3%
Avg. full-time undergrad. rate	907	1,146	26.4%
TUITION AND FEE REV. AS A PCT OF:			
Educational and General Cost	30.6%	23.3%	
Instructional Cost	44.2%	38.1%	
TAP AS A PERCENT OF TUITION AND FEES REVENUES:	30.2%	26.0%	
STANDARD COST INDICES			
Higher Education Price Index			42.3%
Consumer Price Index			43.3%
ENROLLMENT:			
Full-Time Equivalent Students	100,000	91,800	-8.2%

*See glossary for explanation of definitions and methods.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 37

SELECTED REVENUE AND EXPENDITURE DATA* COMMUNITY COLLEGES

	1978-79	1982-83	5-Yr. Chg.
COST PER FTE STUDENT:			
Educational and General	$ 2,700	$ 3,693	36.8%
Instructional	1,463	1,969	34.6%
Non-Instructional	1,237	1,724	39.4%
TUITION AND FEES:			
Revenues per FTE Student	$ 803	$ 1,135	41.3%
Avg. full-time undergrad. rate	758	1,024	35.1%
TUITION AND FEE REV. AS A PCT OF:			
Educational and General Cost	29.7%	30.7%	
Instructional Cost	54.9%	57.6%	
TAP AS A PERCENT OF TUITION AND FEES REVENUES:	32.3%	25.3%	
STANDARD COST INDICES			
Higher Education Price Index			42.3%
Consumer Price Index			43.3%
ENROLLMENT:			
Full-Time Equivalent Students	146,000	161,800	10.8%

*See glossary for explanation of definitions and methods.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 38

SELECTED REVENUE AND EXPENDITURE DATA*
INDEPENDENT SECTOR

	1978-79	1982-83	5-Yr. Chg.
COST PER FTE STUDENT:			
Educational and General	$ 4,698	$ 6,724	43.1%
Instructional	2,704	3,914	44.7%
Non-Instructional	1,994	2,810	40.9%
TUITION AND FEES:			
Revenues per FTE Student	$ 3,678	$ 5,664	54.0%
Avg. full-time undergrad. rate	3,405	5,195	52.6%
TUITION AND FEE REV. AS A PCT OF:			
Educational and General Cost	78.3%	84.2%	
Instructional Cost	136.0%	144.7%	
TAP AS A PERCENT OF TUITION AND FEES REVENUES:	9.5%	7.1%	
STANDARD COST INDICES			
Higher Education Price Index			42.3%
Consumer Price Index			43.3%
ENROLLMENT:			
Full-Time Equivalent Students	300,100	318,900	6.3%

*See glossary for explanation of definitions and methods.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 39

SELECTED REVENUE AND EXPENDITURE DATA*
DEGREE-GRANTING PROPRIETARY INSTITUTIONS

	1978-79	1982-83	5-Yr. Chg.
COST PER FTE STUDENT:			
Educational and General	$ 2,043	$ 2,820	38.0%
Instructional	741	892	20.4%
Non-Instructional	1,302	1,928	48.1%
TUITION AND FEES:			
Revenues per FTE Student	$ 2,256	$ 3,065	35.9%
Avg. full-time undergrad. rate	2,342	3,470	48.2%
TUITION AND FEE REV. AS A PCT OF:			
Educational and General Cost	110.4%	108.7%	
Instructional Cost	304.5%	344.4%	
TAP AS A PERCENT OF TUITION AND FEES REVENUES:		**	
STANDARD COST INDICES			
Higher Education Price Index			42.3%
Consumer Price Index			43.3%
ENROLLMENT:			
Full-Time Equivalent Students	17,300	22,800	31.8%

*See glossary for explanation of definitions and methods.
**Data not readily available.

Source: NYSED, Information Center on Education, except for tuition and fees rates, which are from the Bureau of Postsecondary Finance and Facilities Studies, 1984.

Issue 15. Reallocating and, if necessary, reducing resources to accommodate reduced enrollment, shifting student interests and academic priorities, and straitened State and Federal budgets, without adversely affecting the quality of remaining programs or forgoing all new initiatives.

Fluctuations in enrollment patterns and student interests have been typical of the postsecondary environment for the past few years. Student demand has shifted significantly toward more costly occupational and technological areas. As participation rates have increased, expenditures for remedial work have risen. Utility and plant maintenance costs also have climbed. However, within this environment, current projections indicate that the full-time undergraduate population may decrease by 25 percent in New York State before the end of the century. Obviously, decreased enrollments mean decreased resources, yet the fixed costs which institutions support do not diminish in direct relationship to the decline in enrollment.

In its master plan, State University made seven recommendations related to this issue:

Recommendation #5: The University, to maintain its standards of academic excellence, will strive for a balance between resources and needs in categories of staffing and support most directly affecting program quality.

Recommendation #6: The University will strive to maximize the resources it collects for the patient care provided by its three University hospitals and three University clinics.

Recommendation #7: The University will work with state government and its agencies to develop better procedures for providing care and services in the state correctional facilities and in the state mental institutions.

Recommendation #16: The University will seek capital construction funds for facilities needed to make all campuses fully functional.

Recommendation #17: The University will continue to request a higher level of support for maintenance, repair, and restoration of campus facilities.

Recommendation #20: The University will continue to push for reduced energy consumption and increased energy efficiency at all campuses.

Recommendation #22: The University in cooperation with state government will actively pursue new, improved and more flexible funding formulas for public higher education.

According to the State University master plan, "Enrollment-driven funding formulas were developed in the past primarily to provide classroom instruction for full-time students. The same formulas are less adequate as part-time students and public service programs claim increasing shares of the University's resources. Particularly as campuses try to meet the emerging needs of their service areas (for instance, employee training and retraining to maintain business and industrial productivity), New York State needs to consider new or modified formulas for calculating support levels for public higher education." Funding formulas should recognize that fixed costs do not change in proportion to minor fluctuations in enrollments. Despite such fluctuations there is a need to maintain a minimum critical mass of resources to fund new services and to account for inflation.

The City University master plan did not address this issue directly. The University states that it requested $10 million in its 1984-85 budget to improve student/faculty ratios to conform to the State's instructional staff model.

According to their consolidated master plan, many of the proprietary institutions project enrollment increases during the next four years. There are no plans for reduction in either programs or personnel. Since proprietary institutions do not receive any direct public funding, there has always been a strong motivation to coordinate academic and fiscal planning.

At present, the majority of proprietary institutions fully utilize space assigned to enrollment-related, nonresidential facilities. The space is in good to excellent condition due to sector emphasis on preventive maintenance.

The Commission on Independent Colleges and Universities comments: "Historic access and choice levels achieved through New York State public policy under the guidance of the Regents has been seriously eroded by the combination of the increased cost of providing education, increased student and parent debt to meet the price of attendance, and the failure of public policy to maintain funding levels established at the onset of direct institutional and student loan programs. These factors have resulted in extraordinary burdens on independent institutions for unfunded student aid." CICU recommends "The Regents and the State Education Department should develop a better understanding among policymakers of the educational value and fiscal prudence of maintaining a truly diverse and accessible postsecondary system" (#24).

In the independent sector, seven of the institutions whose master plans were reviewed in detail do not project significant overall declines in their enrollments. The Academy of Aeronautics sees its unique mission as being in its favor; it anticipates "some eroding of enrollment but not enough to require drastic action." Albany Medical College projects steady enrollment levels through 1988, not surprising in light of student demand to study medicine. Clarkson University indicated that its experience of a growing pool of applicants leads it to project a slow growth in enrollments and a rising quality of student admitted. New York University anticipates attracting a greater number of out-of-state students. Pace University does not expect the decline in the number of recent high school graduates to have a large effect on its student body because most of its students are in the 25-40 age group, which is growing in number.

To increase resources, both Canisius and Sarah Lawrence are seeking to increase their endowments. To use resources more effectively, Daemen College will monitor enrollments in programs annually and is prepared to shift resources accordingly. Marist states that it evaluates its programs on the basis of "outcomes related to institutional goals." RIT intends to integrate academic and fiscal planning; Sarah Lawrence to begin a comprehensive long-range planning effort involving faculty, administration, students, and trustees. Syracuse expects to reduce the size of the University's staff by 4.7 percent through 1988-89 and by ten percent through 1992-93. Syracuse also plans to curtail acquisition of physical facilities, limiting itself principally to completion of remaining construction on academic and administrative facilities with donated funds.

The Regents are concerned that should enrollments significantly decline, both Federal and State resources will decline by rates not mirrored by commensurate declines in remaining fixed costs at institutions. More funds would have to be diverted from other areas of institutional budgets just to meet those fixed costs. To maintain the quality of higher education, encourage innovation, and foster new programs to meet changing needs, resources should not decline so precipitously. It is essential that resources be available for both immediate fixed costs, and the maintenance of quality and access.

RECOMMENDATIONS

15-a. In view of the relationships between funding and enrollments, the Regents recommend that the Governor work with State University to "pursue new, improved, and more flexible funding formulas for public higher education," which State University says it will pursue in Recommendation #22 of its 1984 master plan.

15-b. The Regents recommend to the Governor that a portion of the savings in State aid resulting from declining enrollments in all sectors, should they occur, be used to meet the special needs of access, the maintenance of quality, or both. This issue was first addressed in the Regents 1980 Statewide Plan, and the Regents agree with the Governor's response that such a plan should not be a guarantee of long-term protection against enrollment declines. The Regents do not expect or desire such a guarantee, but rather call for protection of the excellence and access which has been achieved in our postsecondary system.

The Regents hope to achieve a commitment to the concept that, while some decline in State aid is expected if enrollments fall significantly, some of the "savings" to the State should be invested in the future of postsecondary education. This investment in the maintenance of quality could be made by the Governor, but not necessarily on a strict representational basis. That is, if a dollar is saved because of decreasing enrollment in one sector, a portion of that dollar need not be returned to that sector. Rather, the Governor would retain the ability to meet the needs, in whatever sector they occur, across sector lines. Of course, the Governor would more than likely wish to consult the sectors in determining needs.

As an example, one of several alternative distribution methods might be through a yearly grant program funding one-time grants for the maintenance of excellence. Depending on prevailing economic circumstances, the Executive would recommend that a certain portion of significant savings from enrollment decline be made available for the program. The grants would be strictly additional to regular budgetary needs for ongoing programs and usual cost of living increases. Grants could be made to promote innovative approaches to problems such as the need for remediation at the postsecondary level or the enhancement of graduate efforts in the humanities and the social and behavioral sciences. If imbalance occurs among the sectors, the Governor might solicit proposals or direct a special study to correct it. In no case would such a grant be used for regular program operations, or cause an ongoing commitment of funds beyond the specific grant.

Facilities

Nearly every type of postsecondary institution is included in The University of the State of New York. From the smallest proprietary institution with six or seven thousand gross square feet, to several large major universities, each measuring over 6.5 million gross square feet, there is wide diversity of facilities within the system. As of fall 1982, 241 institutions reported a total of over 196 million gross square feet of facilities. Taken all together, that area is equal to over 30 percent of the island of Manhattan, and it only encompasses structures, not any of the institutions' accompanying property. If conservatively valued at a replacement cost of $150 a gross square foot, postsecondary facilities would represent a $30 billion resource commitment.

The Regents are concerned about the adequacy and preservation of effective facilities for a number of reasons. The amount of space defines, in part, an institution's activities and educational environment. Facilities in poor repair, or otherwise inadequate, will ultimately be reflected in the quality of the institution's product — its educational and research programs — and, hence, in the preparedness of its graduates and its contributions to the discovery of new knowledge. Facilities account for the majority of capital budgets, and a sizable portion of the operating expenses. A building in need of "weatherizing," for example, will have a negative effect on an institution's operating budget. The decision to commit resources to a facility, whether to build, lease, or renovate, is an important one in institutional planning. The decision may have major implications for all three budgeting perspectives — operating, capital, and asset management. The decision should be made not only with consideration for short-term needs, but also with the realization that it will affect program offerings and budgets for many years to come; the fiscal impact of facilities is examined in the first section following these introductory remarks. Finally, unlike more subtle resource commitments a school makes, facilities are physical. By their very existence they speak for the institution, its quality, characteristics, accessibility, and image.

Facilities — The Fiscal Impact

Maintenance and operations costs, estimated at over $784 million per year, equal about $1,040 per student, statewide. Debt service amounts to $439 million per year. Table 40, below, shows the effect of M&O and debt service, on a per student basis.

Table 40

DEBT SERVICE AND ESTIMATED M&O COSTS

	Annual Debt* Service ($'s in millions)	Debt Service per FTES Fall 1982	Debt Serv. Plus Estimated M&O** per Student
SUNY			
State-Operated	$206	$1,270	$2,310
Community Colleges	31	250	1,290
CUNY			
Senior Colleges/Grad. Center	$ 58	$ 630	$1,670
Community Colleges	30	790	1,830
Independent	$113	$ 360	$1,400
Proprietary	$ 1	$ 40	$1,080
STATEWIDE	$439	$ 580	$1,620

*1981-82

**Estimated at $1,040 per FTES, based on $4 per gross square foot.

Source: NYSED, Bureau of Finance and Facilities Studies, 1984.

Table 40 shows the debt service and estimated M&O costs per student across the sectors of higher education in New York. The levels certainly argue that facilities is an area which has a great impact on institutional financing. For example, at SUNY State-operated campuses, annual debt service and M&O, $2,310 per student, is 184 percent of the tuition and fee revenue per FTE student.[1] If one added to the SUNY M&O and debt service, funds appropriated from the State's Capital Construction Budget for major and minor rehabilitation ($16.3 million in 1982-83), the State Purpose Budget for the Repair Program ($8.5 million in 1982-83), and the Dormitory Authority's Rehabilitation and Repair Program ($1.9 million), the total facilities-related expenses for State-operated and community college campuses would equal at least $534 million per year. That is an amount equal to 26 percent of the total State support for all of postsecondary education.

Condition and Ownership

The 1982 institutional facilities survey conducted by the Education Department showed that New York's higher education facilities (including residential space) totaled over 196 million gross square feet, 13 million gross square feet more than reported in 1979. Even granting inevitable data discrepancies, this still reflects a significant increase; statewide the increase amounts to 17 square feet per full-time equivalent student.

The space was distributed approximately evenly between the public and independent sectors, as shown in Table 41, below. SUNY, with 41 percent of the total gross square feet, and CUNY, with nine percent, account for 50 percent of the total.

Data are available which detail the total Gross Square Feet by both ownership and condition. There is very little leasing or sharing of facilities, with the exception of the proprietary sector, which leases over half of its space. However, the City University community colleges lease just over 12 percent of their space, and the CUNY senior colleges seven percent. The majority of space, except at the proprietary schools, is either owned or under amortization (i.e., being paid over time).

In the fall of 1982, institutions reported data for both main, "primary," campuses and branch campuses, but did not report facilities at extension centers or sites. Table 42, below, shows the changes in facilities condition from 1979 to 1982, within each sector. It shows that 80 percent of all facilities were reported to be in "Satisfactory"[2] condition. Over 34 million gross square feet, 17 percent of the total, was judged "In Need of Remodeling,"[2] and three percent (nearly six million gross square feet) was designated for demolition, or was planned for termination. The figures concerning facilities in need of remodeling or termination are significant in that there has been a steady increase in those categories from only 11 percent in 1971, to 15 percent in 1979, to over 17percent in 1982. The 1971 and 1979 percentages include both facilities in need of remodeling, and facilities which should be demolished; facilities scheduled for termination are not included. When they are compared to the 1982 percentages of 17.5 percent in need of remodeling, and three percent either in need of demolition or planned for termination, it is evident that deferred maintenance is an ever-increasing liability. Moreover, it is a liability which is not reflected in institutions' annual financial statements.

Except for the proprietary sector, which reported 100 percent of its space to be "Satisfactory," the independent sector is in the best condition of all sectors. Ninety-five percent of the independent sector's space was reported by those institutions to be "Satisfactory." Independent institutions reported four-and-a-third million gross square feet in need of remodeling, and only 356,000 gross square feet that should be demolished, or planned for termination. These data are somewhat encouraging given that approximately 40 percent of independent college buildings in New York are more than 40 years old, and 20 percent existed before the turn of the century.

The State and City Universities reported a different situation. Both SUNY and CUNY showed much less "Satisfactory" space (proportional to their aggregate space) than the independent or proprietary sectors. SUNY reported 28 percent of its total space "In Need of Remodeling," almost all of it (97 percent) at the State-operated units. SUNY's self-reported facilities in need of remodeling, as a percent of total SUNY space, rose 11 percent from 1979 to 1982.

Table 42 shows a marked contrast, however, between the City University campuses and the three other sectors. Less than a third of CUNY's space, as reported by the University, is considered "Satisfactory." This is down from 37 percent "Satisfactory" in 1979. Only 33 percent of the senior college and graduate center space,

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[1] Tuition and fee revenues are cited only as an example of the magnitude of facilities-related expenses. Student revenues, including room and board fees, are used in addition to tuition and fees, to meet these expenses. Although other revenues from Auxiliary Enterprises, etc., are also used, almost the entire amount is derived from student revenues.

[2] 1979 and 1982 data used throughout this section of the 1984 Statewide Plan were reported by institutions in 1979 and 1982 in regular HEDS/HEGIS data submissions concerning facilities.

Table 41

TOTAL GROSS SQUARE FEET BY CONDITION
(in Thousands of GSF)
Fall 1982

	Satisfactory	In Need of Remodeling	Demolition or Termination Planned or Required	Total	% of Total
SUNY					
State-Operated[A]	44,109	21,316	938	66,363	33.8
Community Coll.	11,763	667	868	13,298	6.8
Total	55,872	21,983	1,806	79,661	40.6
CUNY[B]					
Senior Colleges/ Grad. Center	4,368	5,924	2,896	13,188	6.7
Community Coll.	1,076	2,062	821	3,959	2.0
Total	5,444	7,986	3,717	17,147	8.7
Independent	94,325	4,349	356	99,030	50.4
Proprietary	580	--	--	580	.3
TOTAL	156,221	34,318	5,879	196,418	100.0

[A] Includes Central Administration
[B] Central Administration apportioned between Senior Colleges/Grad. Center, and Community Colleges, based on FTES ratio.

Source: NYSED, Bureau of Finance and Facilities Studies, 1984.

and 27 percent of the space at CUNY community colleges, was considered in "Satisfactory" condition as of the fall of 1982. Forty-six percent of CUNY's total gross square footage was reported to be "In Need of Remodeling," increased from 41 percent in 1979. Almost 22 percent of the CUNY aggregate gross square footage was judged by CUNY to be in need of demolition or planned for termination.

The Regents note that the remodeling needs of the State and City Universities are beginning to be addressed by the State. SUNY's self-reported 1982-83 Rehabilitation and Repair need totaled about $92 million, just over one percent of the 1982 total estimated replacement value. Actual 1982-83 appropriations, and funds from the Dormitory Authority's Rehabilitation and Repair program for SUNY, came to almost $27 million. Concerning CUNY, the Dormitory Authority reported it is proceeding with in-depth condition surveys of buildings it constructed for CUNY to determine requirements for extraordinary maintenance and rehabilitation. In 1982-83, the Authority expended over $6.5 million for rehabilitation at the City University. The Authority expended $4.4 million on rehabilitation in the independent sector.

Change in Facilities

The preceding section considered higher education facilities at the sector levels, in the aggregate, by gross square feet. This next section presents current nonresidential facilities, contrasted in some cases with 1979 data, by net assignable square feet (NASF). In addi-

Table 42

CHANGE IN TOTAL GROSS FACILITIES CONDITION
1979 to 1982

	Satisfactory		In Need of Remodeling		Demolition and Termination Planned or Required		Total*
	1979	1982	1979	1982	1979	1982	
SUNY	81%	70%	17%	28%	2%	2%	100%
CUNY	37	32	41	46	21	22	100%
Independent	89	95	10	4	1	0	100%
Proprietary	97	100	3	0	0	0	100%
TOTAL	82%	80%	15%	17%	3%	3%	100%

*Note: Not all totals add to 100% due to rounding.

Source: NYSED, Bureau of Finance and Facilities Studies, 1984.

tion, the data for selected nonresidential room use categories are presented. Data are available which include more detailed tables showing distribution of space by room use over a wide typology of institutions.

Table 43 shows the nonresidential "primary campus" facilities for the two years, 1979 and 1982. Nonresidential space is shown for "Academic Facilities" and "Other Non-residential" space. "Academic Facilities" include classrooms, laboratories, offices, and libraries. "Other Nonresidential" space includes museums, auxiliary services, athletic facilities, and independent operations. This distinction between "Academic" and "Other Nonresidential" space provides a categorization of space common to most institutions. Few institutions will have hospitals or large independent operations, but all have classrooms, offices, libraries, and, to varying degrees, laboratories. Significant changes between 1979 and 1982 include total increases of over four percent for both City University and the proprietary sector, and of nearly three percent in the independent sector. In all, nonresidential facilities at primary campuses increased by two percent (1.69 million NASF) from 1979 to 1982. A more detailed version of Table 43 appears in Appendix E.

The aggregate movement or even movement within sectors is not really meaningful unless viewed in the context of an enrollment indicator. In the 1982 Progress Report on the 1980 Plan, the Regents used the "Full-Time Equivalent Day Student" (FTED) unit indicator. The FTED measure is based on the concept that space needed for students in an evening session is not additional space, i.e., additive to space needed for the day session. Table 44 is based on the same nonresidential NASF as Table 43, but per FTED student. The Department intends to refine comparative indicators further for use with more discrete, and more comparable, groups. While these indicators themselves do not serve to identify excesses or deficiency of space, the Regents encourage institutions to use such data, in tandem with other techniques, in the preparation of long-term facilities plans.

Table 44 indicates a small increase of 4.1 NASF per student (2.9 percent) in the aggregate State total of nonresidential space at primary campuses. This increase is due, in part, to the two percent nonresidential space increase at the primary campuses. Enrollment change is the second variable reflected in Table 44. (A more detailed version of Table 44 appears in Appendix E). Table 45, below, shows the change from 1979 to 1982 in total FTED enrollment at all campuses. Table 45 indicates an overall 1.4 percent increase in FTED enrollment, and varying results across the sectors, ranging from a 10.1 percent FTED decline at CUNY senior colleges, to a 21.4 percent FTED increase at degree-granting proprietary institutions.

The most significant changes occurred at CUNY and at the SUNY community colleges. CUNY showed a 17.5 percent space increase per student at the senior

Table 43

NONRESIDENTIAL FACILITIES AT PRIMARY CAMPUSES (to the Nearest Thousand NASF): 1979 and 1982

	Academic[1] Facilities		Other Non-Residential		Total Non-residential		% Change in Total
	1979	1982	1979	1982	1979	1982	
New York State[2]	51,361	52,810	31,591	31,835	82,952	84,645	2.0
State Univ. State-Operated Campuses[3]	14,233	14,455	9,362	9,416	23,595	23,871	1.2
City University, Senior Colleges[3]	5,151	5,512	1,903	1,877	7,054	7,389	4.7
Comm. Colls. (SUNY) & CUNY combined[3]	6,700	6,734	3,602	3,505	10,302	10,239	-.7
Independent Insts.	24,523	25,205	16,408	16,836	40,931	42,041	2.7
Degree-Granting Proprietary Insts.	562	589	145	147	707	736	4.1

[1] Academic Facilities include classrooms, laboratories, offices, and libraries.

[2] Includes the central administrations of State University and City University.

[3] Excludes the central administration.

Source: NYSED, Bureau of Finance and Facilities Studies, 1984.

colleges. CUNY's senior college FTED and full-time equivalent student (FTES) populations decreased over the period (by ten and seven percent, respectively), but, despite these changes, the senior college non-residential space per student in 1982 measured only about three-quarters of the statewide total of such space per student. The SUNY community colleges experienced a very slight decline in non-residential space, and a significant 12 percent increase in both FTED and FTES enrollment. Space per student dropped from 87 NASF to 81 NASF, about seven percent.

There was little change, in the statewide aggregate, in total classroom and laboratory space per student. Some significant changes in room use per FTED were:

—"Other Space" per student increased by 6.3 percent, and

—"Library Space" per student increased by 7.7 percent

The space per FTED indicator is affected by two variables — absolute change in space, and change in enrollment. Table 42 indicated the change in non-residential space at the primary campuses. Over the period 1979 to 1982, statewide FTED enrollment increased by a little over one percent, while full-time equivalent students increased by 3.7 percent. In the public sector, the Regents would expect that the increase in space per student reflects the final stage of the building process begun in the 1960's. As to the future, sector data supplied for use in the 1984 Plan were not adequate or comprehensive enough to be compiled and analyzed in a meaningful fashion. Whether the changes leading to increased space per student will continue is not readily apparent. The Regents urge institutions to participate in facilities-related data gathering and forecasting activities which the Education Department will conduct over the period of this Plan.

The use of indicators such as space per student measures can be helpful in generally assessing space needs for higher education. The U.S. Department of Education, for example, uses the measure of 100 net assignable square feet (NASF) of academic space per student as a planning factor. There are some definitional differences between the "academic space" presented in Tables 43 and 44, and the United States Department of Education's use of the term "academic space." Generally the Regents do not include some space included in the United States Department of Education definition. However, the New York levels are within the overall 100 NASF per student level. USDOE recognizes differences among institutions and, in fact, Federal space measures for specific types of institutions range from 70 NASF at a "public two-year" school to 150 NASF at a "private university." Table 44 indicates a range from 30.5 NASF at New York's degree-granting proprietary institutions, to 52.3 NASF at community colleges, to 113.3 NASF at independent institutions.

New York's Five-Year Capital Plan

Chapter 837 of the Laws of 1983 requires the Governor to prepare a five-year Capital Plan encompassing all State agencies, including SUNY and CUNY, and submit it to the Legislature as part of each year's Executive Budget. The Capital Plan is to include program information and spending projections for new and continuing projects: acquisition, construction, demolition, replacement, rehabilitation, and renovation of the State's capital assets. The legislative intent in requiring the new five-year plan is to establish a comprehensive capital planning and budgeting process fully integrated with the State's financial planning and debt management activities, in order to maximize the potential public benefits derived from limited public resources. State agencies, including SUNY and CUNY, are required to submit yearly to the Division of

Table 44

NONRESIDENTIAL FACILITIES PER FTED AT PRIMARY CAMPUSES: 1979 and 1982

	Academic[1] Facilities		Other Non-residential		Total Non-residential		% Change in Total
	1979	1982	1979	1982	1979	1982	
New York State Total	86.9	90.1	53.3	54.2	140.2	144.3	2.9
State Univ. State-Operated Campuses	97.9	101.9	64.5	66.6	162.4	168.5	3.7
City University Senior Colleges	65.4	78.5	24.2	26.7	89.6	105.3	17.5
Community Colleges (SUNY & CUNY combined)	54.5	52.3	29.3	27.2	83.8	79.5	-5.2
Independent Insts.	109.5	113.3	73.0	75.4	182.5	188.7	3.4
Degree-Granting Proprietary Insts.	31.9	30.5	8.2	7.6	40.0	38.2	4.7

[1] Academic Facilities include classrooms, laboratories, offices, and libraries.

Source: NYSED, Bureau of Finance and Facilities Studies, 1984.

Table 45

CHANGE IN TOTAL FULL-TIME EQUIVALENT DAY ENROLLMENT: 1979 and 1982

	% Change
New York State Total	1.4
State University of New York	
State-Operated	-2.1
Community Colleges	12.1
City University of New York	
Senior Colleges	-10.1
Community Colleges	3.0
Independent Institutions	1.4
Degree Granting Proprietary Institutions	21.4

Source: NYSED, Bureau of Finance and Facilities Studies, 1984.

the Budget descriptions of capital projects recommended to be undertaken in any of the next five fiscal years, and statements of proposed financing methods. The Division of the Budget is responsible for coordinating activities of departments and agencies with respect to planning and implementation of State capital projects proposed. The Governor submits the Capital Plan along with the Executive Budget to the Legislature for approval. Of course, annual appropriations are still required for projects. No budget bill submitted by the Governor may include any proposed appropriation or reappropriation for any capital project not included in the Capital Plan.

The Regents have broad planning authority under Education Law. Their responsibility extends to the determination of need for additional facilities for both new and existing public and independent institutions. While the Governor's major role is in the public sector, he plays a significant part in statewide facilities planning by review, comment on, and approval of the Regents Statewide Plan for Postsecondary Education.

The Regents believe, therefore, considering the area of comprehensive planning for higher education facilities for both the State's Five-Year Capital Plan (in regard to SUNY and CUNY) and the Regents Statewide Plan, that the Governor should direct his staff to work with the Education Department in developing such plans. Such cooperative efforts are desirable for two reasons. First, efforts would tend to better integrate facilities planning for the system of postsecondary education. Campuses are not islands, and in a time of limited resources we cannot afford not to consider the systemwide implications of facilities planning. Second, cooperation among planning bodies will develop processes to ensure that activities of each body are carried out in the most effective manner, with the least duplicative effort. An example of such a cooperative process is the Higher Education Construction Impact Statement proposed in the 1980 Plan. The statement would make possible reviews analogous in nature and content, although not in process, for both independent institutions seeking financing from public agencies and public institutions. The statement would also provide a mechanism for institutions, both public and independent, to express their facilities needs consistently in a comprehensive format. Governor Carey termed the concept an interesting one, and urged its further development. Although preliminary discussions were held, development has been delayed.

Both the Governor and the Regents have statutory responsibility for aspects of capital planning, and the Regents have access to statewide data which provides a systemwide context for planning efforts. The Regents believe cooperative planning efforts can enhance both the new five-year planning effort and the Regents statewide planning for all postsecondary education in New York.

Issue 16. Encouraging efforts to identify areas of shortage and oversupply of faculty, and to provide retraining and other forms of faculty development directed at using faculty resources more efficiently.

Changing patterns of student demand for academic programs and probable enrollment declines are presenting college and universities with faculty shortages in high-demand fields and oversupplies in less popular disciplines. The institutions have obligations regarding professional development, quality of life, and adequate financial remuneration to faculty members to whom they have made institutional commitments. Successful approaches need to be identified and used to adjust staff, retrain faculty, and make more efficient use of skills and knowledge.

In 1981-82, there were 68,499 full- and part-time instructional faculty at New York's public, independent, and proprietary degree-granting institutions. Fifty-eight percent (39,729) were full-time. Of that number, 35,641 were salaried; the balance contributed their services. Over 90 percent of the salaried full-time faculty (32,408) were employed on nine- or ten-month contract; the balance were on 11- or 12-month contract. In 1981-82 the 32,408 full-time instructional faculty members employed on nine- or ten-month contracts earned a mean salary of almost $27,420. Sixty-six percent were tenured. The number of full-time instructional faculty members on nine- or ten-month contract had grown by over seven percent since 1978-79 when it stood at 30,273; over that same period, total enrollment grew by only 5.8 percent.

Between 1978-79 and 1981-82, statewide, the proportion of full-time instructional faculty on nine- or ten-month contract that held tenure remained virtually unchanged, growing only from 65.8 percent to 66.0 percent. However, considerable variation existed among sectors in the proportion who held tenure. In 1981-82, those proportions were:

Table 46

PROPORTION OF SALARIED, FULL-TIME FACULTY ON
9- OR 10-MONTH CONTRACT
WITH TENURE
1981-82

	Proportion Tenured
CUNY Senior Colleges	78.4%
CUNY Community Colleges	76.7
SUNY Community Colleges	76.7
SUNY State-operated Campuses	70.3
Independent Institutions	55.9
Degree-granting Proprietary Institutions	16.8
Statewide Total	66.0

Source: NYSED, Bureau of Postsecondary Planning, 1984.

Except at City University and in the proprietary sector, the proportions of faculty with tenure did not change significantly between 1978-79 and 1981-82. In City University and in the proprietary sector, the proportion with tenure grew (in the latter case, because institutions were added to that sector over the four-year period).

The mean salary of full-time instructional faculty on nine- or ten-month contract in New York grew by over 27 percent between 1978-79 and 1981-82, from about $21,510 to about $27,420. Between 1978 and 1982, the Consumer Price Index for the northeast census region rose by 44.3 percent. Therefore, the 1981-82 mean salary of $27,420 was worth only some $19,000 in 1978 dollars.

Variations existed among the sectors in both 1978-79 and 1981-82 in mean full-time faculty salaries, as follows:

Table 47

RATIOS OF MEAN FULL-TIME FACULTY SALARIES
9- OR 10-MONTH CONTRACT

	1981-82 Index	1978-79 Index
Statewide Total	1.00	1.00
CUNY Senior Colleges	1.19	1.12
CUNY Community Colleges	1.11	1.03
SUNY State-operated Campuses	.99	1.01
Independent Institutions	.96	.97
SUNY Community Colleges	.91	.95
Degree-granting Proprietary Institutions	.52	.51

Source: NYSED, Bureau of Postsecondary Planning, 1984.

Within the overall picture, changing patterns of student demand are presenting institutions with actual or potential faculty shortages in high-demand fields, and possible oversupplies in less popular disciplines. There are three dimensions to this problem. The first is sustained growth in undergraduate enrollment over a long period, outpacing the supply of potential qualified faculty. For example, the areas of business and management, communications, and computer and information sciences saw steady growth in student interest between 1971 and 1982. The number of full-time upper-division business majors grew by more than 130 percent over that period; the number in communications grew by over 300 percent; the number in computer and information sciences, by more than 650 percent (see Table 15, above, in the chapter on Excellence).

The second aspect is long-term declines in student interest. Between 1971 and 1982, such sustained declines in interest were evident in mathematics, where the number of full-time, upper-division majors declined by almost 55 percent; in foreign languages, with an enrollment decline of 60 percent; and in education, with a decline of over 55 percent (see Table 15).

The third aspect is those fields that have seen changes in student interest. The number of full-time upper-division majors in the physical sciences grew between 1971 and 1975, declined between 1975 and 1979, and grew between 1979 and 1982. Other fields experienced similar variations.

On the supply side, the problem is one of attracting new faculty in periods of increasing student demand and releasing or reassigning existing faculty in periods of declining student demand. There have been suggestions that the produc[illegible]toral degrees in certain fields has not been a[illegible] may not suffice in future years to meet needs for new faculty. It is true both nationally and in New York State that trends in doctoral degrees during the 70's did not follow the large increase in total enrollments. The number of doctoral degrees has remained fairly level. However, declining enrollments and low faculty turnover rates projected for most fields may not require the hiring of many new faculty. Each field of study requires separate analysis, and the degree trends in selected fields provide a useful perspective. In New York State between 1969-70 and 1981-82, the number of doctoral degrees awarded increased substantially in the fields of communications (2,700.0 percent), computer and information sciences (160.1 percent), and the biological sciences (50.3 percent). Notable declines occurred in the physical sciences (-25.8 percent), engineering (-23.8 percent), education (-15.7 percent), and business and management (-6.6 percent). Many of these trends are clearly at variance with trends in undergraduate interest and employment prospects in those fields. Business, computer science, and engineering have been and are expected to continue to be growth areas. In certain cases, lucrative careers available to baccalaureate and master's degree recipients may lure individuals away from doctoral programs. For example, the Regents 1982 study of "Engineering Manpower and Engineering Education in New York State" found that the average starting salary, nationwide, for new assistant professors of engineering in 1981-82 was $23,000, while new baccalaureate degree recipients in engineering were earning starting salaries of $22,500 or more in 1981. In other cases, conditions of faculty employment may be discouragining pursuit of faculty careers.

In their 1984 master plans, the sectors identify disciplines in which faculty shortages exist or are emerging. State University reports that in the fields of business (particularly accounting and finance), science, engineering, computer science, and most areas of medicine, it is difficult to find and retain qualified faculty. The principal reason for the shortages, according to State University, is competition from business and industry; significant differentials exist between the salaries offered by colleges and universities and those offered by business and industry. The City University also states that faculty shortages occur in fields which offer faculty and students large rewards in business and industry. Thus, engineering, computer science, and data processing departments are in need of additional staff. According to their consolidated master plan, for the majority of proprietary institutions, a shortage of faculty is not a problem. Well qualified professionals are continuing to enter the field of vocational education. However, a few do expect some difficulty in recruiting faculty in business education and computer-related programs.

State University identifies a number of strategies that colleges could employ to alleviate faculty shortages in particular fields. "For the immediate future, colleges and universities will have to use part-time adjunct faculty who are employed full-time elsewhere in certain fields, explore the possibility of using foreign-trained academic workers more extensively, and seek ways in which campuses can share faculty. Campuses will need to continue efforts in faculty development and retraining." The University states that representatives of industry should participate in the design of academic programs; this could lead to shared employment arrangements. The University also states that there should be increased opportunities for faculty consulting and for their participation in work through external grants. A plan similar to medical practice plans might be applied to faculty in areas such as engineering, allowing them to interact with industry and receive additional funds beyond their regular university salaries. State University identified a number of other policies that might ease faculty shortages in the understaffed areas, including the use of discretionary funds to enhance salaries for highly qualified faculty in some disciplines, the granting of tenure to part-time faculty, the implementation of a program of shared faculty positions, and the liberalization of leave policies.

The City University master plan notes that, between 1974 and 1976, City University lost more than 1,650 full-time faculty and several thousand part-time faculty due to the fiscal crisis. Since 1976, the University states, "the faculty has enjoyed slow but significant growth, and recruitment has been tailored to ameliorate the burden of understaffed disciplines, though not without attention to its commitment to liberal education." According to City University, higher faculty salaries, improved computer services, enhanced laboratory and research facilities, and funds to support summer research are the primary tools with which the University can attract and keep qualified full-time faculty in the fields where they are needed.

The City University states that as a public institution whose mission involves broad access, the University must look to the State of New York and to New York City for the provision of these vital recruitment resources. In its 1984-85 budget request, the University requested a program of faculty enrichment, designed to attract and keep instructional staff in engineering, business, and computer science. A State-supported program of summertime research grants for faculty in high demand areas may also be expected to attract individuals to faculty positions. The University states that improvements to its information processing systems, including networking with other research institutions, will play an increasingly important role in attracting scholars, especially in the highly technical disciplines where student demand is highest. In the absence of increased State funding, the University states that it cannot be expected to support first-rate computer operations. However, it is hoped that steps now being taken to make efficient use of existing resources will assist in faculty recruitment.

According to the City University, without significant additional aid, faculty shortages will persist in a number of disciplines. However, the University has identified a number of tactics, in addition to the use of adjunct faculty, which the University can employ to assure that core instructional needs are met in all fields. One, the University Faculty Development Program, is currently in its third year. It has trained tenured faculty in areas of low student demand to teach in high demand areas, such as computer science, data processing, and basic writing. The others, implementation of which are contingent upon further study, are a program of visiting professorships to balance workload and an early retirement program which could facilitate the transfer of full-time faculty budgetary lines from underutilized departments to departments in need of additional staff.

The proprietary sector consolidated master plan acknowledges that the higher education community faces a shortage of faculty in scientific, engineering, technological, and business disciplines and suggests that the State should fund a campaign to communicate the need for qualified faculty in these areas and should provide financial aid for students pursuing programs that lead to faculty teaching careers in the shortage areas.

To attract new faculty in shortage areas, eight of the 14 independent institutions whose master plans were reviewed said that they planned to improve salaries in those disciplines. Four are seeking to improve working conditions (e.g., upgrade research facilities). Others said they planned to develop endowed chairs, provide university-subsidized faculty housing, pay moving expenses for new faculty members, and develop exchange programs with industry. Sarah Lawrence College proposed that the Regents "encourage cooperative tuition remission" among colleges and universities for faculty retraining and development. Canisius College suggested that the State develop a "Science and High Technology Super Fund and Administrative Agency" to mobilize human resources. Albany Medical College urged support for regional consortia that could enhance faculty exchanges, faculty development programs, and other activities to further the effective use of faculty resources.

To enhance flexibility, NYU, Syracuse, and Hofstra all have early retirement programs, and St. John's and Canisius are considering them. On the other hand, after studying early retirement, Sarah Lawrence rejected that strategy as "too costly." Syracuse encourages full-time faculty nearing retirement to move to part-time status. Sarah Lawrence has tenure-track, part-time faculty positions. Clarkson University has established a tenure limit of 67 percent of all faculty.

The issue of faculty shortage and oversupply in specific disciplinary areas is particularly critical for institutions which must respond to shifting student demand, honor their commitments to faculty, and balance a diminishing budget. In addressing this complex issue in their master plans, the sectors have suggested several approaches to the problem which reflect their concern for both student and faculty welfare and for the excellence of their academic enterprise.

RECOMMENDATIONS

16-a. The Regents recommend that the Governor give consideration to implementing programs suggested by the sectors to assist them in their efforts to balance faculty supply and student demand, which also would assist in increasing the numbers of women and members of minority groups at the associate professor and professor ranks, or who achieve tenure. Among the programs proposed are the following: Summertime research grants for faculty. Creation of shared faculty positions. Support for faculty retraining in high-demand fields. Support for faculty exchanges with business, industry, schools, and government agencies.

Issue 17. Assuring campuses sufficient flexibility in the management of their resources to carry out their unique missions and preserve lay board governance, institutional autonomy, and vitality.

Continuing economic austerity and rapidly shifting academic goals have combined to create a requirement for greater management flexibility in institutions of higher education. In the academic area, the need is for more freedom from undue constraints from governmental and voluntary accrediting authorities, without abandoning the goals of quality and responsible performance those constraints were intended to protect. In the fiscal area, the need is to permit flexible use of government funds in a period of scarce resources while preserving accountability and responsiveness to the intent of the Legislature, the Governor, and/or the Congress in allocating public funds. Alongside such external constraints on management flexibility, various internal constraints are implicit in the traditional structure of university governance, employee relations, and budgeting.

In its master plan, State University states as a recommendation, which the Regents have approved, that "The University, while recognizing the legitimate concerns of other state agencies, will continue to seek greater administrative flexibility in order to increase its managerial effectiveness" (#2).

The State University master plan points out that variation among academic programs, facilities, and campus missions contributes to significant differences among units in operational costs. Any State funding formula should recognize such differences and allow programmatic and mission flexibility to respond to the changing needs of the citizens of New York.

> To function more effectively as a system, the University needs greater freedom in interpreting and applying many of the regulations governing its operation. Often such regulations are drawn up and administered by other agencies of the State of New York. While SUNY is sensitive to the responsibilities of its sister agencies, however, it seeks their cooperation in eliminating redundant, inefficient, or unproductive regulatory constraints....The goal of the recommendation is to enable the University to manage its operations in as timely, efficient, and responsive a manner as possible.

The SUNY plan says that for both graduate education and research, "The University must be granted new degrees of management responsibility. It must be able to reallocate resources swiftly, as opportunities present themselves, and without fear of loss to other agencies with worthy, but different, priorities. The

University must be permitted to plan five to ten years ahead, the minimum time it takes to establish academic and research at the graduate level. The funds for sponsored projects and research must continue to be managed by the Research Foundation of the State University of New York to allow the flexibility to respond promptly to program announcements, requests for proposals (RFPs), and other cooperative arrangements."

According to State University, a more flexible policy regarding maximum summer income, extra service payments, and contracted services is needed to encourage faculty to affiliate their research programs and consultancies with SUNY and the Research Foundation. Presently some faculty are engaged in summer and extramural research projects with outside agencies and other institutions because of more lucrative salary arrangements.

On the same issue, the Governor stated in his 1984 Executive Budget,

> I retain my commitment to allowing State managers to manage. This Budget contains measures that will build on the directions called for by the Task Force I established in response to the concerns of the State and City Universities.

The pressing need for greater management flexibility in public institutions is broadly recognized, and responsible attempts are being made to address this issue. The Regents support these attempts and encourage those who are addressing this problem to continue to pursue appropriate innovative approaches.

RECOMMENDATION

17-a. The Regents recommend that the Governor continue his efforts to make available to the public sectors greater administrative flexibility in the management of their resources.

Additional Materials

—Fiscal Glossary

—Tables 48-53: Student Support Sources Model Output

Fiscal Glossary

General Terms

Full-Time Equivalent Student (FTE Student). A measure of enrollment which takes into account both part-time and graduate students. Each full-time student (graduate or undergraduate) equals one FTE student; three part-time undergraduate students equal one FTE student; each part-time graduate student equals .40 of one FTE student.

Higher Education Price Index (HEPI). The HEPI measures the price changes of a fixed group of goods and services purchased by colleges and universities, excluding sponsored research and auxiliary enterprises. Major components of the index, which is prepared by Research Associates of Washington, are salaries of faculty, administrators, and other professional personnel; clerical, technical service, and other nonprofessional personnel; and contracted services, such as data processing, communication, transportation, supplies and materials, equipment, books and periodicals, and utilities, based on the 1971-72 buying pattern of colleges and universities.

While the overall index increased 42.3 percent from 1978-79 to 1982-83, personnel increased 38.9 percent, comprised of a 35.0 percent increase in professional salaries, 36.1 percent increase in nonprofessional salaries, and 34.9 percent increase in fringe benefits costs. The other major component of the index (services, supplies, and equipment) increased 54.9 percent, with utilities having increased 98.8 percent, followed by books and periodicals (49.3 percent), services (41.7 percent), supplies (39.6 percent), and equipment (33.8 percent).

SUNY State-Operated Campuses includes all SUNY units (Central Administration, University Centers, University Colleges, Health Sciences Centers, Specialized Colleges, Statutory Colleges, Agricultural and Technical Colleges) except Community Colleges.

CUNY Senior Colleges include the Graduate Center, 4-Year Colleges, NYC Technical College and a portion of Central Administration based on the proportion of CUNY Senior College FTE enrollment to total CUNY enrollment, including Community Colleges. The exception to this is research expenditures, which are distributed more heavily to the Senior Colleges. The equation allocates four times as much of the research expenditures to Senior College FTE students as Community College Student:

$$\text{Pct. Central Administration Research Expenditures to Senior Colleges} = \frac{(4 \times \text{Sr. College FTE})}{(4 \times \text{Sr. College FTE}) + (1 \times \text{CC FTE})}$$

$$\text{Pct. Central Administration Research Expenditures to Community Colleges} = \frac{(1 \times \text{Community College FTE})}{(4 \times \text{Sr. College FTE}) + (1 \times \text{CC FTE})}$$

Table 32

Student Aid includes TAP, which goes to eligible students in all sectors, SUSTA (SUNY supplemental tuition assistance), CUSTA (CUNY supplemental tuition assistance), tuition waivers (SUNY and CUNY), CAP (CUNY). In addition, there are several programs of aid to students in SUNY, CUNY, and the independent sector: the student aid component of programs for the disadvantaged, College Work Study Reimbursement, Regents Scholarships and Fellowships, and State Guaranteed Student Loans. Some of these programs, such as tuition waivers, are funded as part of institutional aid, while others, like TAP, are provided directly to students.

Institutional Aid includes all State funds for general operating assistance. For SUNY, CUNY, and the community colleges these figures are taken from the institution's HEDS/HEGIS reports (State appropriations, State restricted and unrestricted grants and contracts). State institutional aid to the independent sector consists of Bundy Aid, medical-dental capitation, and the institutional component of the Higher Education Opportunity Program.

Table 34

Tuition and Fees Revenues. Data provided by the institutions as part of the HEDS/HEGIS forms on all tuition and fees assessed against students, regardless of eventual remissions, waivers, or exemptions. In other words, this is the amount that the institution would receive if every student were charged for all instruction and there were no tuition waivers, remissions, or defaults. Tuition waivers and remissions are reported separately as part of institutional expenditures.

Federal, State, and Local Unrestricted Revenues include both appropriations and unrestricted grants and contracts. This category, for example, includes local support of community colleges and CUNY.

Tables 35-39

Educational and General expenditures in these tables refers to "student-related educational and general expenditures," sometimes called student-related E&G costs. This is a broad indicator of the cost of education, including all instructional and student service costs as well as a proportion of academic support, institutional support, and operation and maintenance of the physical plant. That proportion is calculated as follows:

$$\frac{\text{instruction}}{(\text{instruction} + \text{organized research} + \text{public service})}$$

Specifically excluded from student-related educational and general expenditures are scholarships and fellowships, mandatory transfers (debt service), public service, and organized research.

Instruction costs are the major component of student-related educational and general expenditures. Instruction includes the expenditures of the instructional divisions of the institutions and expenditures for departmental research and public service which are not separately budgeted. Included are credit and noncredit instruction. Excluded are expenditures for academic administrators whose primary function is administration (e.g., academic dean).

Noninstructional student-related E&G costs equals the total student-related E&G expenditures less instruction. Specifically included are student services and a proportion of academic support, institutional support, and operation and maintenance as described above.

Average full-time undergraduate tuition and fee rate. This figure represents the combined tuition and fees for the average full-time undergraduate student. As such, it is a measure of the student's cost of education.

This weighted average is calculated by multiplying the number of full-time undergraduate students by the reported undergraduate tuition and fees rate for each institution within a sector. The sum of the products is then divided by the total number of full-time undergraduate students in the sector to obtain the average undergraduate tuition and fee rate. Excluded were institutions which had no full-time undergraduate enrollment, as well as those institutions which had tuition and fee charges but did not report the undergraduate tuition and fee rate on the HEDS/HEGIS form.

Table 48

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
SUNY STATE-OPERATED
FULL-TIME UNDERGRADUATE DORMITORY RESIDENT (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$4,252			$ 4,252			$ 4,252			$ 4,252	
Less:													
Pell	(C)		1,496			1,096			346			--	
TAP	(D)		994			669			250			--	
Remaining Cost			$1,762			$ 2,487			$ 3,656			$ 4,252	
As % (B)			41.4			58.5			86.0			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			4,252	
Remaining Cost			$1,062			$ 1,747			$ 1,835			$ --	
As % (B)			25.0			41.1			43.2			0.0	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	1,039	--	--	1,039	--	--	1,039	--	--	--	--	--
Remaining Cost		$ 23	$1,062	$1,062	$ 708	$ 1,747	$1,747	$ 796	$ 1,835	$1,835	--	--	--
As % (B)		0.5	25.0	25.0	16.7	41.1	41.1	18.7	43.2	43.2	0.0	0.0	0.0
Less:													
GSL	(G)	23	1,062	1,062	708	1,747	1,747	796	1,835	1,835	--	--	--
Remaining Cost		--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less:													
Institutional	(H)	--	--	--	--	--	--	--	--	--	--	--	--
Remaining Cost	(I)	--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Family-Student Cost (E)+(G)+(I)		$ 723	$1,762	$1,762	$1,448	$ 2,487	$2,487	$2,617	$ 3,656	$3,656	$4,252	$ 4,252	$4,252
As % (B)		17.0	41.4	41.4	34.1	58.5	58.5	61.6	86.0	86.0	100.0	100.0	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 49

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
SUNY COMMUNITY COLLEGES
FULL-TIME UNDERGRADUATE COMMUTER (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$3,563			$ 3,563			$ 3,563			$ 3,563	
Less:													
Pell	(C)		1,164			1,096			346			--	
TAP	(D)		846			521			250			--	
Remaining Cost			$1,553			$ 1,946			$ 2,967			$ 3,563	
As % (B)			43.6			54.6			83.3			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			3,563	
Remaining Cost			$ 853			$ 1,206			$ 1,146			--	
As % (B)			23.9			33.9			32.2			0.0	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	724	--	--	724	--	--	724	--	--	--	--	--
Remaining Cost		$ 129	$ 853	$ 853	$ 482	$ 1,208	$1,206	$ 422	$ 1,146	$1,146	--	--	--
As % (B)		3.6	23.9	23.9	13.5	33.9	33.9	11.8	32.2	32.2	0.0	0.0	0.0
Less:													
GSL	(G)	129	853	853	482	1,206	1,206	422	1,146	1,146	--	--	--
Remaining Cost		--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less:													
Institutional	(H)	--	--	--	--	--	--	--	--	--	--	--	--
Remaining Cost	(I)	--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Family-Student Cost (E)+(G)+(I)		$ 829	$1,553	$1,553	$1,222	$ 1,946	$1,946	$2,243	$ 2,967	$2,967	$3,563	$ 3,563	$3,563
As % (B)		23.3	43.6	43.6	34.3	54.6	54.6	63.0	83.3	83.3	100.0	100.0	100.0

[1] Adjusted gross income. Adjusted gross income is that use for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no Institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 50

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
CUNY
FULL-TIME UNDERGRADUATE COMMUTER (DEFENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$3,459			$ 3,459			$ 3,459			$ 3,459	
Less:													
Pell	(C)		1,163			1,096			346			--	
TAP	(D)		844			519			250			--	
Remaining Cost			$1,452			$ 1,844			$ 2,863			$ 3,459	
As % (B)			42.0			53.3			82.8			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			3,459	
Remaining Cost			$ 752			$ 1,104			$ 1,042			--	
As % (B)			21.7			31.9			30.1			0.0	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	702	--	--	702	--	--	702	--	--	--	--	--
Remaining Cost		$ 50	$ 752	$ 752	$ 402	$ 1,104	$1,104	$ 340	$ 1,042	$1,042	--	--	--
As % (B)		1.5	21.7	21.7	11.6	31.9	31.9	9.8	30.1	30.1	0.0	0.0	0.0
Less:													
GSL	(G)	50	752	752	402	1,104	1,104	340	1,042	1,042	--	--	--
Remaining Cost		--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less:													
Institutional	(H)	--	--	--	--	--	--	--	--	--	--	--	--
Remaining Cost	(I)	--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Family-Student Cost (E)+(G)+(I)		$ 750	$1,452	$1,452	$1,142	$ 1,844	$1,844	$2,161	$ 2,863	$2,863	$3,459	$ 3,459	$3,459
As % (B)		21.7	42.0	42.0	33.0	53.3	53.3	62.5	82.8	82.8	100.0	100.0	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 51

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
INDEPENDENT SECTOR GROUP I
FULL-TIME UNDERGRADUATE DORMITORY RESIDENT (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$10,276			$10,276			$10,276			$10,276	
Less:													
Pell	(C)		1,496			1,096			346			--	
TAP	(D)		1,719			1,394			471			--	
Remaining Cost			$7,061			$ 7,786			$ 9,459			$10,276	
As % (B)			68.7			75.8			92.1			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			4,464	
Remaining Cost			$6,361			$ 7,046			$ 7,638			$ 5,812	
As % (B)			61.9			68.6			74.3			56.6	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	1,253	--	--	1,253	--	--	1,253	--	--	1,253	--	--
Remaining Cost		$5,108	$6,361	$6,361	$5,793	$ 7,046	$7,046	$6,385	$ 7,638	$7,638	$4,559	$ 5,812	$5,812
As % (B)		49.7	61.9	61.9	56.4	68.6	68.6	62.1	74.3	74.3	44.4	56.6	56.6
Less:													
GSL	(G)	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375
Remaining Cost		$2,733	$3,986	$3,986	$3,418	$ 4,671	$4,671	$4,010	$ 5,263	$5,263	$2,184	$ 3,437	$3,437
As % (B)		26.6	38.8	38.8	33.3	45.5	45.5	39.0	51.2	51.2	21.3	33.5	33.5
Less:													
Institutional	(H)	2,087	2,087	--	2,087	2,087	--	2,087	2,087	--	2,087	2,087	--
Remaining Cost	(I)	$ 646	$1,899	$3,986	$1,331	$ 2,584	$4,671	$1,923	$ 3,176	$5,263	$ 97	$ 1,350	$3,437
As % (B)		6.3	18.5	38.8	13.0	25.2	45.5	18.7	30.9	51.2	0.9	13.1	33.5
Family-Student Cost (E)+(G)+(I)		$3,721	$4,974	$7,061	$4,446	$ 5,699	$7,786	$6,119	$ 7,372	$9,459	$6,936	$ 8,189	$10,276
As % (B)		36.2	48.4	68.7	43.3	55.5	75.8	59.6	71.7	92.1	67.5	79.7	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:

(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 52

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
INDEPENDENT SECTOR GROUP 3
FULL-TIME UNDERGRADUATE DORMITORY RESIDENT (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$7,790			$ 7,790			$ 7,790			$ 7,790	
Less:													
Pell	(C)		1,496			1,096			346			--	
TAP	(D)		1,719			1,394			471			--	
Remaining Cost			$4,575			$ 5,300			$ 6,973			$ 7,790	
As % (B)			58.7			68.0			89.5			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			4,464	
Remaining Cost			$3,875			$ 4,560			$ 5,152			$ 3,326	
As % (B)			49.7			58.5			66.1			42.7	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	1,017	--	--	1,017	--	--	1,017	--	--	1,017	--	--
Remaining Cost		$2,858	$3,875	$3,875	$3,543	$ 4,560	$4,560	$4,135	$ 5,152	$5,152	$2,309	$ 3,326	$3,326
As % (B)		36.7	49.7	49.7	45.5	58.5	58.5	53.1	66.1	66.1	29.6	42.7	42.7
Less:													
GSL	(G)	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,309	2,375	2,375
Remaining Cost		$ 483	$1,500	$1,500	$1,168	$ 2,185	$2,185	$1,760	$ 2,777	$2,777	--	$ 951	$ 951
As % (B)		6.2	19.3	19.3	15.0	28.1	28.1	22.6	35.7	35.7	0.0	12.2	12.2
Less:													
Institutional	(H)	483	948	--	948	948	--	948	948	--	--	948	--
Remaining Cost	(I)	--	$ 552	$1,500	$ 220	$ 1,237	$2,185	$ 812	$ 1,829	$2,777	--	$ 3	$ 951
As % (B)		0.0	7.1	19.3	2.8	15.9	28.1	10.4	23.5	35.7	0.0	0.0	12.2
Family-Student Cost (E)+(G)+(I)		$3,075	$3,627	$4,575	$3,335	$ 4,352	$5,300	$5,008	$ 6,025	$6,973	$6,773	$ 6,842	$7,790
As % (B)		39.5	46.6	58.7	42.8	55.9	68.0	64.3	77.3	89.5	87.0	87.0	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:

(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 53

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
PROPRIETARY
FULL-TIME UNDERGRADUATE COMMUTER (DEPENDENT)

Family Income[1]	(A)	$9,000	$14,000	$23,000	$36,500
Total Cost of Attendance	(B)	$5,343	$ 5,343	$ 5,343	$ 5,343
Less:					
Pell	(C)	1,496	1,096	346	--
TAP	(D)	1,719	1,394	471	--
Remaining Cost		$2,128	$ 2,853	$ 4,526	$ 5,343
As % (B)		39.8	53.4	84.7	100.0
Less:					
Family-Student Contribution	(E)	700	740	1,821	4,464
Remaining Cost		$1,428	$ 2,113	$ 2,705	$ 879
As % (B)		26.7	39.6	50.6	16.5

		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	761	--	--	761	--	--	761	--	--	761	--	--
Remaining Cost		$ 667	$1,428	$1,428	$1,352	$ 2,113	$2,113	$1,944	$ 2,705	$2,705	$ 118	$ 879	$ 879
As % (B)		12.5	26.7	26.7	25.3	39.6	39.6	36.4	50.6	50.6	2.2	16.5	16.5
Less:													
GSL	(G)	667	1,428	1,428	1,352	2,113	2,113	1,944	2,375	2,375	118	879	879
Remaining Cost		--	--	--	--	--	--	--	$ 330	$ 330	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	6.2	0.0	0.0	0.0
Less:													
Institutional	(H)	--	--	--	--	--	--	--	330	--	--	--	--
Remaining Cost	(I)	--	--	--	--	--	--	--	--	$ 330	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	0.0
Family-Student Cost (E)+(G)+(I)		$1,367	$2,128	$2,128	$2,092	$ 2,853	$2,853	$3,765	$ 4,196	$4,526	$4,582	$ 5,343	$5,343
As % (B)		25.6	39.8	39.8	39.2	53.4	53.4	70.5	78.5	84.7	85.8	100.0	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothe[illegible] estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

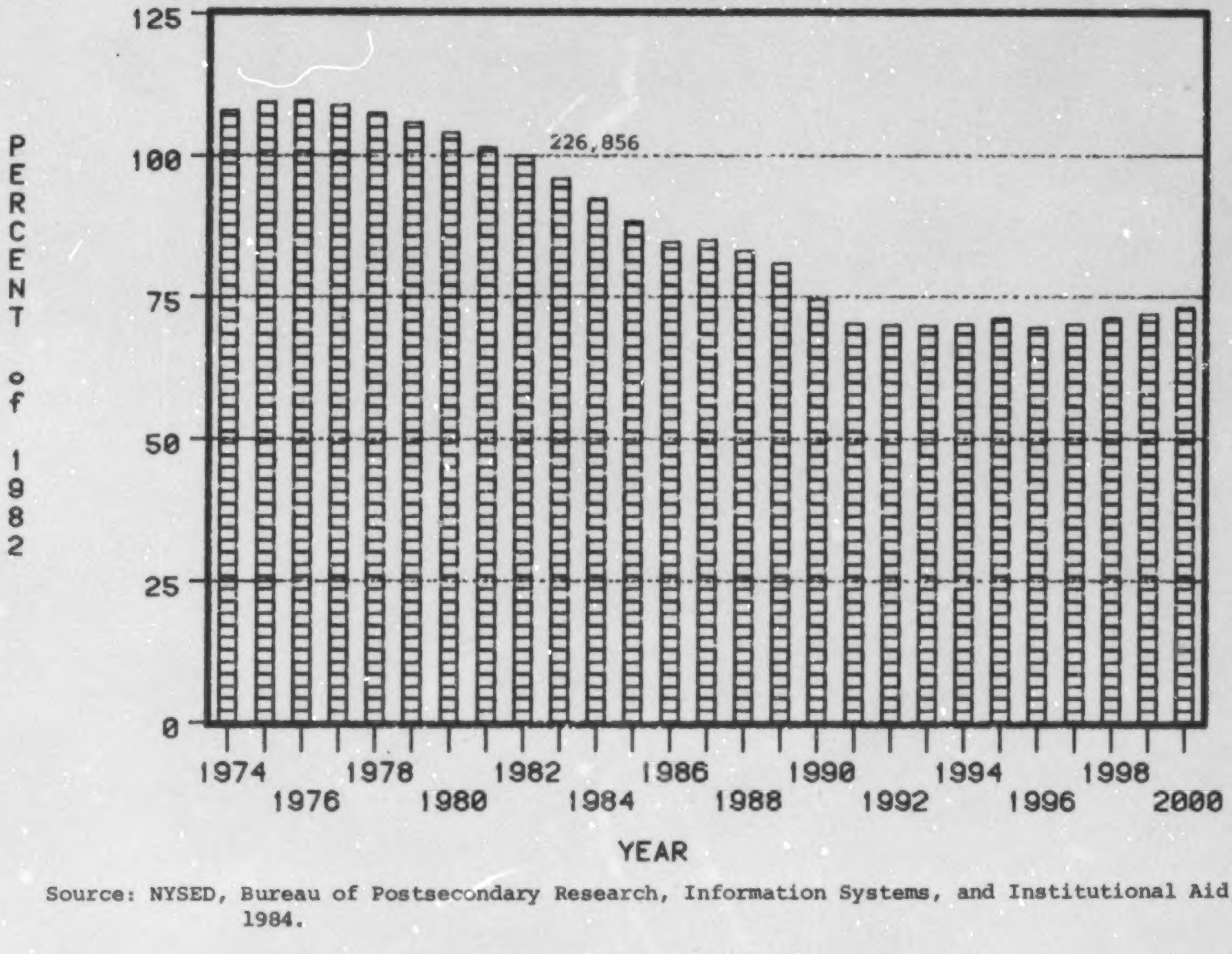
Regents Enrollment Projections

Higher education in New York State is in the early stages of a period of major change. Demographic changes are under way that will result in significant declines in the number of traditional college-age students and major shifts in the characteristics of students over the next decade. In addition, both operating costs of colleges and costs of attendance are increasing rapidly, putting severe strains on the financial resources of students and their families, government agencies, and private donors. In recent years, college enrollments have risen despite steady declines in high school graduates each year since 1975 (See Figure A). Since 1980, virtually all of the enrollment growth in New York State has been in the community colleges and other two-year institutions (Table 54). Thus far, most colleges have not felt the demographic declines because of large changes in patterns of college participation related to both initiatives by the colleges and large societal shifts. However, in 1982 full-time, first-time enrollments did drop for the first time in many years, suggesting that these external forces may have peaked. The more prominent changes in enrollment and participation patterns are listed below. They directly influenced the enrollment projections that have been developed, although the projections do not assume further changes in participation patterns.

FIGURE A

NEW YORK STATE HIGH SCHOOL GRADUATES

ACTUAL SPRING 1974-1982 & PROJECTED SPRING 1983-2000



Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 54

NEW YORK STATE DEGREE-CREDIT ENROLLMENT
1975, 1977-1983

	1975	1977	1978	1979	1980	1981	1982	1983
New York State								
Full-time Undergraduate	549,374	542,690	538,343	548,648	560,155	567,751	567,304	573,172
Part-time Undergraduate	256,068	225,340	229,423	234,637	244,251	252,769	254,465	256,308
Full-time Graduate	46,675	45,613	45,625	45,587	46,912	47,215	45,634	47,002
Part-time Graduate	123,608	101,600	99,137	99,829	98,363	97,803	94,949	97,718
Full-time First-Professional	17,197	19,767	20,864	21,036	21,463	22,266	22,268	22,417
Part-time First-Professional	1,638	1,851	1,928	2,086	2,344	2,477	2,527	2,558
Full-time, First-time	157,724	155,667	157,191	160,644	162,816	164,956	156,721	158,325
Full-Time, First-Time Undergraduate								
State University								
4-Year	23,568	22,072	23,445	24,069	24,322	23,466	22,723	21,748
Agricultural & Technical	11,289	10,226	10,953	10,474	11,029	10,524	10,026	9,982
Community Colleges[1]	37,041	35,991	35,424	36,634	37,200	38,908	35,496	35,853
City University								
Senior[2]	20,785	16,579	16,718	16,397	15,761	15,844	15,390	14,787
Community Colleges	9,838	12,699	11,861	12,186	10,922	10,985	10,680	11,339
Independent								
4-Year	45,478	46,735	47,801	49,449	51,663	52,226	48,960	50,530
2-Year	3,275	3,361	3,527	3,214	3,543	3,573	3,520	3,903
Proprietary	6,400	8,004	7,462	8,221	8,376	9,430	9,926	10,183

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[1] Fashion Institute is included in Community College Total.

[2] New York City Technical College is included in Senior College Total.

Table 54 (Cont.)

	1975	1977	1978	1979	1980	1981	1982	1983
Full-time Undergraduate								
State University								
4-Year	111,634	106,736	106,381	107,679	111,782	112,769	112,251	111,577
Agricultural & Technical	21,097	20,105	20,371	20,680	20,702	20,390	20,108	19,882
Community Colleges[1]	83,061	81,732	80,764	83,223	89,625	92,702	93,906	95,929
City University								
Senior[2]	99,626	83,539	75,620	76,878	72,418	70,520	68,869	67,648
Community Colleges	32,417	36,699	34,310	34,649	30,748	30,924	31,604	33,542
Independent								
4-Year	182,655	189,685	193,954	200,504	207,771	211,361	210,189	211,296
2-Year	7,341	8,981	8,835	9,010	9,870	9,738	9,875	10,007
Proprietary	11,543	15,163	15,108	16,025	17,239	19,297	20,502	23,291
Part-time Undergraduate								
State University								
4-Year	18,507	17,919	19,453	21,302	23,877	24,318	24,220	23,907
Agricultural & Technical	8,332	8,201	8,429	8,074	8,574	8,254	8,534	8,060
Community Colleges[1]	73,554	74,364	79,181	82,285	84,067	88,889	88,230	88,919
City University								
Senior[2]	64,832	39,251	36,807	35,875	36,612	37,638	38,583	39,059
Community Colleges	26,959	14,484	13,772	13,300	16,437	17,407	19,656	22,275
Independent								
4-Year	58,022	62,335	62,476	63,641	65,012	66,912	66,689	64,137
2-Year	1,305	2,451	2,735	3,596	3,559	3,509	3,140	3,356
Proprietary	4,575	6,335	6,570	6,564	6,113	5,842	5,413	6,595

[1] Fashion Institute is included in Community College Total.

[2] New York City Technical College is included in Senior College Total.

Table 54 (Cont.)

	1975	1977	1978	1979	1980	1981	1982	1983
Full-time Graduate								
State University	11,975	10,809	10,602	10,888	11,261	11,293	10,818	11,052
City University	4,515	4,242	4,606	4,657	4,522	4,743	5,000	5,036
Independent	30,185	30,562	30,417	30,042	31,129	31,179	29,816	30,883
Proprietary	0	0	0	0	0	0	0	31
Part-time Graduate								
State University	25,742	20,167	19,217	18,519	18,337	16,882	15,843	16,234
City University	22,425	11,355	11,182	11,513	11,536	11,998	12,585	14,137
Independent	75,441	70,078	68,738	69,797	68,490	68,923	66,521	67,347
Full-time First-Professional								
State University	3,693	3,863	3,963	4,058	4,182	4,235	4,256	4,246
City University	0	0	0	0	0	0	0	138
Independent	13,504	15,904	16,901	16,978	17,281	18,031	18,012	18,033
Part-time First-Professional								
State University	19	0	0	0	8	9	4	8
Independent	1,619	1,851	1,928	2,086	2,336	2,468	2,523	2,550
All Enrollment								
State University	357,614	343,946	348,361	356,708	372,415	379,741	378,170	379,806
City University	250,774	189,570	179,297	176,872	172,273	173,230	176,297	181,835
Independent	370,072	381,847	385,984	395,644	405,448	412,171	406,765	407,609
Proprietary	16,118	21,498	21,678	22,589	23,352	25,139	25,915	29,917
Total	994,578	936,861	935,320	951,823	973,488	990,281	987,147	999,175

[1] Fashion Institute is included in Community College Total.

[2] New York City Technical College is included in Senior College Total.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Participation Patterns

- While enrollment levels have changed in noticeable ways, the enrollment shares of each sector have been relatively stable, especially when examined separately for two-year and four-year institutions (Tables 71-78 at the end of this chapter). As shown in Table 71, while the independent sector predominates in the four-year institution category, with 51.7 percent of the undergraduates, compared to State University with 27.3 percent and City University with 20 percent, the situation is quite different in the two-year college category. Here SUNY predominates with 68.4 percent of the enrollment. The comparable figure for CUNY is 18.8 percent. Also observable is the strength of the independent sector in graduate education, with 67.9 percent of total graduate enrollment. Looking at these data longitudinally from 1978 to 1983: in share of undergraduates at four-year colleges, the independent sector showed a slight increase of 1.9 percent, SUNY a growth of one percent, and CUNY a decline of three percent. The situation at the two-year college level is also characterized by relatively small shifts, with SUNY's enrollment share declining by 2.5 percent, the most significant change in this category; CUNY's increasing minimally by 0.9 percent; the independent colleges showing no change; and the proprietary institutions displaying the largest increase, 1.6 percent.

  The three percent decline in CUNY's share of four-year enrollments is significant enough to merit closer examination. The decline actually spans a longer period, 1975-1980, during which the CUNY system was adjusting to the introduction of tuition charges. It appears to have leveled off since 1980. Further analysis over the next four years is needed to determine the significance and stability of this shift. Perhaps the most significant changes which can be observed in Table 71 are the increase of over six percent in the overall enrollment share of two-year institutions between 1973 and 1983 and a decline of four percent in the graduate enrollment share during this same period. Additional observations can be made by examining the tables on full-time, part-time, and full-time, first-time enrollment shares. In particular, full-time, first-time enrollments are a useful leading indicator of total enrollment trends. Enrollment shares of this group have been roughly stable during recent years; however, 1982 brought the first overall decline in enrollment levels in several years.

- In recent years, approximately 51 percent of New York high school graduates have enrolled in colleges in New York State as full-time, first-time degree credit students the year after they graduated. Another 12 percent of the graduates typically enter college on a full-time basis outside of the State the following year or soon after, and another three to four percent typically delay full-time entry to a college in New York State for one to five or more years. The tendency to enroll in-state or out-of-state has been quite stable.

- Undergraduate college participation rose substantially for all age groups between 1978 and 1981, and then leveled off in 1982 (Table 55). In 1983, participation rates were stable for most groups except high school graduates, whose participation as full-time, first-time students rose from 50.6 percent to 52.3 percent, accounting for much of the enrollment increase at community colleges.

- Graduate level participation was stable, or declined, for all age groups between 1978 and 1983 except those over age 35 attending part time.

- Full-time, first-time participation of women rose steadily between 1972 and 1978 and then held steady above the peak for men, through 1983. The peak for men occurred in 1974, after which a decline continued until 1978. Since 1978 the participation rate of men has risen along with that of women, but as of 1983 it was still about five percentage points below that of women.

- Despite population shifts, college students are not now substantially older than they were five years ago. Participation rates have increased slightly more for younger age groups than for older age groups, which has offset the effects of changes in the age profile of potential students. Part-time graduate enrollments are an exception. In 1981, 52 percent of part-time graduate students were 30 or more years of age, compared to 43 percent in 1977.

- The participation of blacks and Hispanics does not approach that of whites at any level of higher education and the gap does not appear to be narrowing (Appendix A). Based on 1980 enrollments, approximately half of white ninth graders eventually enter college, while one-third or fewer of blacks and Hispanics do so. Most of the minority attrition occurs prior to high school graduation. These differences result in different regional enrollment projections, given population shifts now under way.

- Over 12 percent of the full-time undergraduate and part-time graduate enrollments were from outside New York State in 1981, and almost 40 percent of the

Table 55

NEW YORK STATE
RATE OF PARTICIPATION BY AGE GROUP

UNDERGRADUATE

AGE GROUP	Full-Time, First-Time						Part-Time					
	1978	1979	1980*	1981	1982*	1983	1978	1979	1980*	1981	1982*	1983
HSG or 15-19	46.9%	47.5%	49.5%	51.3%	50.6%	51.9%	1.36%	1.47%	1.48%	1.50%	1.53%	1.47%
20-24	.93	1.11	1.04	1.01	1.06	1.02	3.88	3.95	3.96	4.06	4.42	4.43
25-29	.31	.28	.30	.33	.35	.33	2.94	3.00	3.05	3.10	3.41	3.50
30-34	.13	.13	.15	.16	.16	.16	2.63	2.70	2.66	2.62	2.68	2.61
34-44							1.67	1.71	1.84	1.93	1.87	1.91
45-59							.70	.70	.78	.86	.87	.84

GRADUATE

	Full-Time						Part-Time					
	1978	1979	1980*	1981	1982*	1983	1978	1979	1980*	1981	1982*	1983
15-19	--	.01%	.02%	.03%	.03%	.00%	.01%	--	--	--	.02%	.01%
20-24	.60	.61	.60	.59	.61	.55	.95	.92	.86	.83	.87	.73
25-29	.69	.67	.64	.59	.62	.68	2.01	1.84	1.77	1.72	1.80	1.80
30-34	.34	.34	.34	.33	.33	.33	1.39	1.41	1.37	1.39	1.31	1.27
35-44	.14	.14	.16	.16	.15	.15	.73	.78	.81	.83	.77	.88
45-59	.04	.04	.04	.04	.04	.04	.25	.27	.28	.28	.27	.31

*Estimated Rates

Rate = Resident Enrollment Divided by Population in Specified Age Group

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

full-time graduate enrollment was from outside the State. The tendency to enroll near or far from home has been quite stable in recent years, with only a small increase in the proportion of enrollments coming from home regions.

- Along with the increased proportion of students attending two-year institutions has been an increase in enrollment for occupationally related programs. Between 1977 and 1981, the number of associate degrees awarded in liberal arts programs dropped by 16 percent while those awarded in occupational programs increased by eight percent. Seniors in four-year institutions are now also generally more likely to be enrolled in applied programs than in liberal arts programs.

Degrees and Retention

- Proportions of continuing students to relevant entering cohorts have generally increased substantially since 1978 for two-year institutions (Table 56). Between 1982 and 1983 alone, the community college ratios increased by 11 percent. These increases may reflect either improved retention or longer degree completion schedules. The recent emphasis given to developing remedial programs has almost certainly influenced the rates. In any case, there may not be room for institutions to produce much more of an increase in these rates. The situation for upper-division enrollments at four-year institutions is more mixed. Rates for the State University have been stable, while rates for the independent sector climbed about ten percent from 1977 to 1980 and then dropped steadily to below 1977 levels by 1983. Between 1982 and 1983, the independent sector rate declined by almost five percent. These declines deserve greater analysis to identify their underlying source. City University rates declined through 1981 and then rose two to three percent in both 1982 and 1983.

- In the latter half of the 1970's, approximately 20 percent of ninth grade blacks and Hispanics went on to obtain an undergraduate degree, while approximately 40 percent of the ninth grade whites did so. As noted above, much of this difference is attributable to higher high school dropout rates for blacks and Hispanics.

- Of those entering college in recent years, over 90 percent of whites appear to earn an undergraduate degree eventually, while between 55 percent and 65 percent of the blacks and Hispanics earn an undergraduate degree, respectively.

- Of those whites obtaining baccalaureate degrees, just under half appear to go on to obtain a graduate degree. About two-thirds of the Asians and nearly 40 percent of the blacks and Hispanics do the same.

Underlying Trends and Events

Changes in enrollment levels and participation patterns do not occur in a vacuum. They are shaped by and reflect a variety of changes in society. For example, the number of high school graduates has been declining and will continue to decline for several years in New York State, while the growth in the 20-40 year old age group will not continue. Some of the other trends and events most important for higher education enrollments are described briefly below.

High school graduate projections differ for the eight Regents regions in the State of New York (Table 57). Statewide, a decline of 30 percent is expected over the next ten years. The largest declines are expected for (and have been in) the western region (-37 percent), while the smallest declines are expected in New York City (-20 percent). These differences correspond to differences in regional migration patterns and race/ethnic composition of the population. Minority populations are declining at slower rates than are white populations. Minorities may well represent 65 percent of New York City high school graduates in 1993, compared to an estimated 53 percent in 1983. Given the different college attendance patterns of minorities and whites, the sector, level, and institutional enrollment configurations of the 1990's may be different from those of recent years.

Other events have also influenced student choice. High unemployment and generally conservative attitudes have been directing more students toward occupationally related programs in recent years. Most of the increase in participation rates since the late 1970's appears to have been in these kinds of programs, particularly in community colleges. If employment prospects improve in the latter 1980's, participation rates and program choices may slip back to the levels of the 1970's.

Other changes with significant implications for enrollments include relatively higher costs of education for both institutions and students in both the public and independent sectors. Without strong, continuing fiscal support, costs could rise enough to dampen student interest in college significantly. Cost considerations are believed to be one of the more important factors in the strong enrollment trends at community colleges in recent years.

A brief discussion of probable influences on community colleges is useful to clarify what may be fairly permanent changes for the community colleges. It also

Table 56

NEW YORK STATE
TRENDS IN FLOW RATES FOR FULL-TIME UNDERGRADUATES
INDEXED AS A RATIO OF 1978 LEVELS

	1975	1976	1977	1978	1979	1980	1981	1982	Opening Fall 1983	% Change* '82 to '83
SOPHOMORE FLOW RATIO										
4 Yr. Inst.										
SUNY	.99	.95	.99	1.00	.99	1.01	1.03	1.03	1.06	+2.7%
CUNY	.96	.90	.70	1.00	1.02	1.00	1.01	.96	.97	+0.7
IND	1.04	1.01	.97	1.00	1.00	.99	1.02	1.03	1.09	+5.5
PROPR	.85	.90	1.07	1.00	1.06	1.10	.93	.94	1.02	+9.1
2 Yr. Inst.										
SUNY	1.05	.97	1.02	1.00	1.04	1.13	1.11	1.17	1.30	+10.9
CUNY	1.14	1.16	1.19	1.00	1.09	.97	1.05	1.08	1.20	+10.9
IND	.89	1.02	1.05	1.00	1.05	1.29	1.23	1.28	1.30	+1.6
PROPR	1.05	.99	.98	1.00	1.12	1.15	1.27	1.27	1.48	
UPPER-DIVISION FLOW RATIO										
4 Yr. Inst.										
SUNY			1.05	1.00	1.00	1.01	1.00	.99	1.02	+2.8
CUNY			1.06	1.00	.98	.90	.88	.91	.92	+1.4
IND			.97	1.00	1.03	1.06	1.03	.98	.93	-4.6

Sophomore Flow Rate: Estimates the proportion of a freshman class enrolled as sophomores the following year.

Upper-Division Flow Rate: Estimates the proportion of a freshmen and sophomore class enrolled as juniors and seniors two years later.

*Percent Change: The percent change in the actual flow rates.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 57

NEW YORK STATE
PROJECTED POPULATION TRENDS

	Projected 1982	Projected 1992	Percent Change
Population by Age			
15-19	1,523,700	1,157,000	-24%
20-24	1,556,400	1,348,200	-13%
25-34	2,835,000	3,095,700	+9%
35-44	2,180,400	2,674,400	+23%
45-59	2,808,900	2,813,100	+0%

Source: NYS Department of Commerce, Spring 1983.

High School Graduates (Actual 1981-82 & Projected 1991-92)

New York State	226,856	159,000	-30%
Regions			
Western	23,070	14,590	-37%
Genesee Valley	19,360	12,370	-37%
Central	18,770	12,960	-31%
Northern	4,490	2,910	-35%
Northeast	22,524	15,570	-31%
Mid-Hudson	29,570	19,460	-34%
New York City	62,826	50,280	-20%
Long Island	46,246	30,850	-33%

Source: NYSED, Information Center on Education, August 1983

Percent Black & Hispanic High School Graduates (Estimated 1982-83 & Proj. 1992-93)

New York State	19%	23%	+21%
Regions			
Western	8%	10%	+25%
Genesee Valley	7	11	+57%
Central	3	4	+33%
Northern	--	1	--
Northeast	4	5	+25%
Mid-Hudson	12	16	+33%
New York City	49	51	+4%
Long Island	10	13	+30%

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, April 1984.

describes events that in similar, but less dramatic, ways are influencing most other colleges.

Community colleges are typically considered to be highly responsive to changes in the needs of their clienteles, as demonstrated in part by their high rates of new program proposals. Their capacity for change, in conjunction with concerns about the effects of quite certain declines expected in the numbers of high school graduates, has resulted in successful adaptations, marketing, and retention efforts by the community colleges. Not only community colleges, but nearly all institutions, have turned greater attention to recruitment and retention programs in recent years, and these initiatives can be expected to produce temporary enrollment increases, with residual permanent effects caused by more and better programs in place to recruit and retain students. Continuation of open admissions and willingness to maintain remedial programs at community colleges — both strong factors in their recent enrollment growth — also seem likely in light of the demographic changes now under way and existing statutory, regulatory, and policy provisions. Other types of institutions are less uniform than are community colleges, and their enrollment prospects vary substantially depending on the unique circumstances of each institution.

Two additional influences previously mentioned may have only a temporary effect on college enrollments. Relatively high unemployment and increasing net cost differentials across types of colleges since 1979 may be responsible for a significant portion of the increased popularity of community colleges recently observed. It is difficult to project either of these variables, but if the economy continues its turn around, the potential exists for declines in community college enrollment shares as some potential students opt for jobs over college. The cost advantage to students of community colleges and other public institutions also could change depending on decisions made about student aid and institutional aid by institutions and the State and Federal governments.

A number of other events may exert a more permanent positive influence on college enrollments. One that is particularly important for community colleges, though hard to define, is the feeling by many that community colleges have "come of age." They are seen as more acceptable by the public than in the past. This legitimacy has been greatly enhanced by the recent growth of jobs in occupational areas. This continues to be a growth area in our economy, and community colleges have a high proportion of their enrollments in key occupational programs. These programs are not as subject to competition from four-year colleges as are the programs preparing students for transfer to baccalaureate and advanced study. Consequently, the opportunities for four-year institutions to draw students away from community colleges as the demographic pool declines may not be as great as they once were.

The increasing number of adults in our population favors all colleges, but especially the community colleges. Older students are more likely than recent high school graduates to attend close to home at a community college if attending as full-time undergraduates. However, nearly all types of institutions are improving their services to adults and stand to gain by adapting curricula, by initiating extension activities, and by other efforts to meet their special needs. Even if participation rates remain constant, the demographic bulge will increase adult enrollments for a number of years. Adding to this effect is the higher educational attainment of each age group over its preceding generation. Higher educational attainment historically has meant more eligible people, higher participation rates for succeeding generations, and greater willingness to take a few courses to try to get ahead or make a change.

Part of the adult influence is also tied to an increasing proportion of the population that is minority. Historically, minorities have tended to delay entry into college (relative to other groups) until they have been out of high school for several years. Thus, the increase in their proportion of the population may increase adult college participation. The increase in minorities is also important for the larger high school graduate pool. The current high attendance of minorities at community colleges is expected to be a positive influence on community college "enrollment shares" as growth occurs in the proportion of high school graduates that are minorities. Policies designed to give minorities better opportunity to attend and better success rates at four-year institutions could moderate the trend.

The task for this Plan is assessing future trends in these factors and situations, a difficult task at best. The influence of the economy and unemployment is probably the most uncertain, although a strong economic recovery may create opportunities for greater government fiscal support for higher education to help offset negative influences of such a recovery on enrollment levels. Changes in college costs are also uncertain, as are the possible competitive influences of other colleges. Nevertheless, most of the factors identified have positive influences, and both population characteristics and labor market demands appear likely to favor community colleges and part-time participation patterns as much or more in the future than they do now. It seems reasonable, and has been assumed for planning purposes, that over the long run, community colleges will increase their enrollment share a small amount due to the strength of occupational programs. Other colleges will likely have more mixed fortunes. Recruitment efforts, adult-oriented curricula, retention programs, and changing admissions policies have already been used to increase enrollments significantly over expected levels. Further improvements will be harder for the institutions to achieve.

The Projections

Enrollment projections have been developed that reflect differential population trends in six age groups and eight geograhical regions of the State as well as recent enrollment history at individual institutions.[1] One-year trends in participation rates, enrollment shares and retention/flow patterns were assumed to be constant for the entire forecast period, with two exceptions. First, high school graduate participation rates were assumed to drop by 1.5 percentage points by 1992 to reflect the changing race/ethnic composition of the population and the historical participation patterns of each group. Second, institutions having the freedom to attract more students (low acceptance ratios) or having strong recent enrollment trends (community colleges and proprietary institutions) were assumed to increase their enrollment share. Participation changes related to possible external events, such as changing student aid, tuition charges, or economic conditions, were not assumed. Thus, these projections focus on the influence of expected demographic changes in the population. They serve as a baseline from which other events may produce deviations. Several of the following tables provide a range of projections for the outer years of the projection period to highlight the uncertainty of the "status quo" assumptions and the expectation that external events will produce deviations from the baseline. The range is based on a simple plus or minus three percent from the base projection for 1988, and plus or minus four percent for 1992.

In March, 1984, the Regents approved the Regents Action Plan to Improve Elementary and Secondary Education Results in New York, which established new requirements for graduation from secondary school. The effect of these changes on the pool of students eligible for enrollment in postsecondary institutions will be monitored annually by the Department. When appropriate, adjustments will be made in Department projections for postsecondary enrollments to reflect these changes.

Assuming current participation rates by age group and region of the State, shifts in the population by region and age group could result in 111,000 fewer degree credit students of all types in 1992 than in 1983. This would result in total enrollments slightly below the number in 1973. Statewide, a decline of 119,000 students, or 21 percent, is projected in full-time undergraduates (resulting in a number slightly below 1971), while all other enrollment categories except part-time graduates should remain nearly stable (Table 58 and Figure B). Part-time graduate enrollment projections show an increase of eight percent in 1992 because of the population growth of older age groups. If the demographic forces predominate, the decline in full-time undergraduates will be sharp between 1984 and 1987 and then again between 1989 and 1992. Declines will average over two percent per year during the first period and nearly four percent per year during the second period. Smaller declines are projected to continue for full-time undergraduates through the year 1997.

The mix of students in college is expected to continue to become older and more diverse throughout the projection period. The change will be less apparent within than across enrollment categories. In 1983, part-time and graduate students comprised 43 percent of all enrollments. In 1992, they are projected to comprise 49 percent of all enrollments. It is important to recognize that this increase is an increase in proportions, with only small or no increases in the number of older students. Similar statements may be made with respect to the enrollment of women, minorities, out-of-state students, and foreign students, given the continuation of current rates of participation.

Enrollment prospects are expected to vary considerably by region within the State and by sector or type of institution. Regional differences are largely the consequence of differences in the population pools projected for each region. The movement of minorities into New York City has softened the projected high school graduate declines for the City. Conversely, Long Island and the upstate regions have experienced the greatest outmigration of population from the State. As shown in Table 59, these differences translated into projected full-time undergraduate declines of −12 percent for New York City but −19 to −29 percent for the rest of the State by 1992. The largest projected declines are for Long Island and the western region, of −29 percent for each.

Projected changes in the number of part-time undergraduates between 1983 and 1992 range among regions from a change of −5 percent to +7 percent; for full-time graduates from −2 to +5 percent; and for part-time graduates from +3 to +14 percent. The higher projections for part-time graduate students reflect the relatively more favorable population trends for the older students who are more prevalent at this level.

The enrollment prospects of individual institutions, and to a lesser extent of sectors and types of institu-

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[1] See Appendix D for a description of the enrollment projection methodology.

Table 58

NEW YORK STATE
HISTORICAL AND PROJECTED ENROLLMENTS
1970-1983, 1985-2000

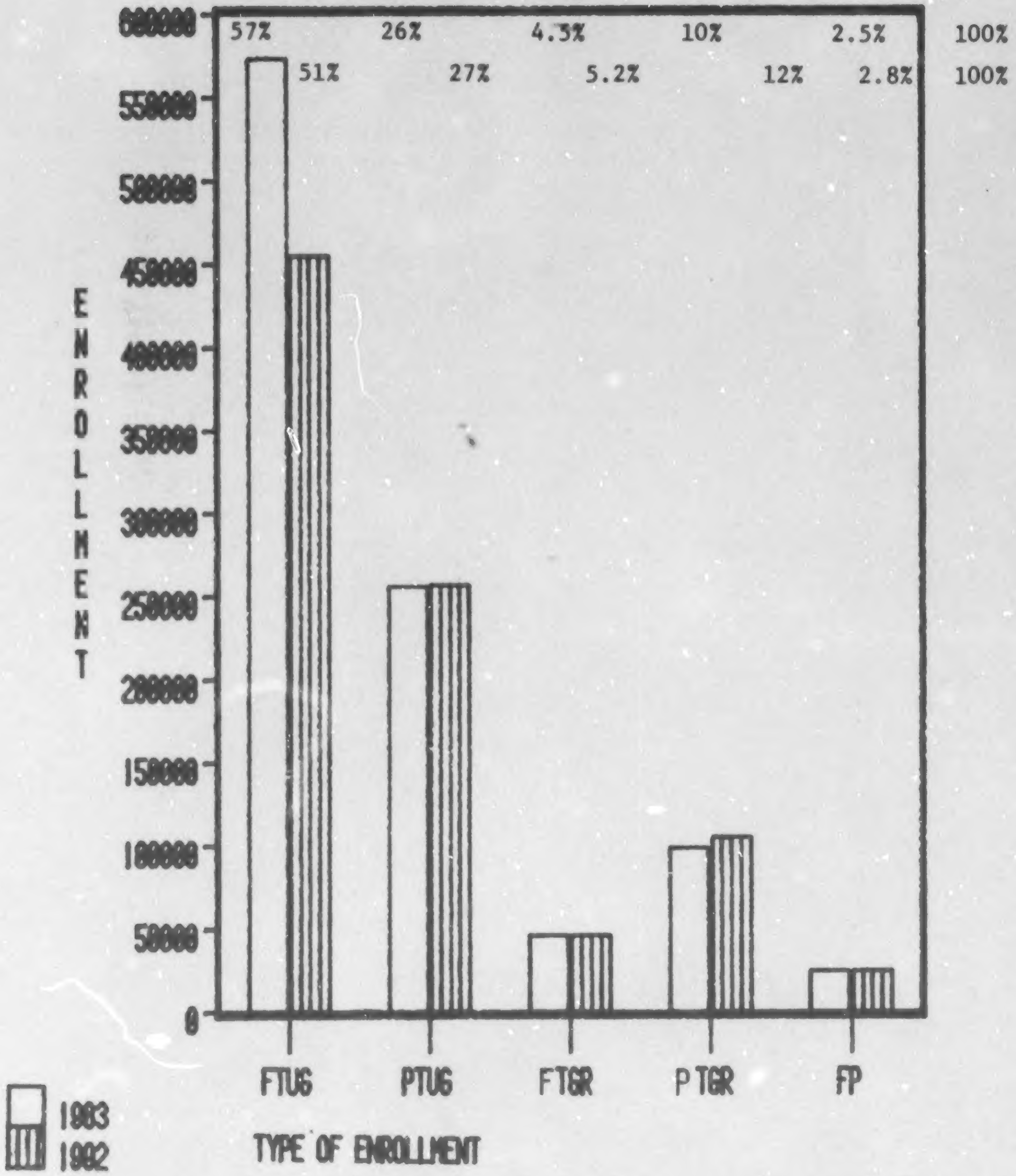
	Full-Time Undergraduate	Part-Time Undergraduate	Full-Time Graduate	Part-Time Graduate	Total First-Prof.
Historical					
1970	439,726	168,656	40,799	99,081	16,128
1971	467,144	174,640	42,656	105,455	16,863
1972	473,199	195,417	42,770	112,937	17,430
1973	491,621	219,385	43,823	118,668	17,685
1974	514,587	234,802	45,079	124,203	18,331
1975	549,374	256,086	46,675	123,608	18,835
1976	538,147	228,131	45,568	105,687	20,150
1977	542,690	225,340	45,613	101,600	21,618
1978	538,343	229,423	45,625	99,137	22,792
1979	548,648	234,637	45,587	99,829	23,122
1980	560,155	244,251	46,912	98,363	23,807
1981	567,751	252,769	47,215	97,803	24,743
1982	567,304	254,465	45,634	94,949	24,795
1983	573,172	256,308	47,002	97,718	24,975
Projected					
1985	555,150	260,350	46,810	101,200	25,310
1986	539,750	260,250	46,850	102,150	25,310
1987	526,800	260,200	46,960	103,050	25,310
1988	522,550	260,200	46,950	103,950	25,310
1989	514,700	260,150	47,000	104,850	25,310
1990	494,800	260,100	47,050	105,750	25,310
1991	473,200	258,500	46,800	105,550	25,310
1992	454,600	256,900	46,200	105,400	25,310
1993	444,750	255,350	45,800	105,250	25,310
1994	439,350	253,750	45,350	105,050	25,310
1995	437,550	252,200	44,950	104,900	25,310
1996	435,350	251,050	44,500	104,150	25,310
1997	432,150	249,900	44,050	103,400	25,310
1998	432,500	248,750	43,600	102,650	25,310
1999	433,850	247,600	43,150	101,900	25,310
2000	436,650	246,450	42,750	101,150	25,310

Source: NYSED, Bureau of Postsecondary Research, Information Systems and Institutional Aid, 1984.

FIGURE B

NYS ENROLLMENTS IN POSTSECONDARY INSTITUTIONS

Actual 1983 and Projected 1992



Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 59

NEW YORK STATE
PROJECTED ENROLLMENT CHANGES
1983 to 1992
By Region and Sector/Type of Institution

	Undergraduate		Graduate	
	Full-Time	Part-Time	Full-Time	Part-Time
Regents Region				
Western	-29%	-1	-1	+8
Genesee Valley	-27	+3	0	+7
Central	-23	+2	+2	+8
Northern	-27	+5	+1	+8
Northeast	-19	+4	+1	+11
Mid-Hudson	-21	+7	+5	+12
NYC	-12	-5	-2	+3
Long Island	-29	+2	+4	+14
NYS	-21%	0%	0%	+7%
Sector/Type				
State University				
4-Year	-23	+2	+2	+10
Agric. & Tech.	-28	+3	--	--
Community College	-24	+3	--	--
Total	-24%	+3%	+2%	+10%
City University				
Senior	-9	-5	-3	+1
Community College	-6	-6	--	--
Total	-8%	-5%	-3%	+1%
Independent				
4-Year	-24	+1	0	+8
2-Year	-28	-1	--	--
Total	-24%	+1%	0	+8%
Proprietary	-10%	-4%	--	--

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

tion, vary more than the regional projections. Large variations reflect, for example, local population trends, programs emphasized, student age profiles, recent retention patterns, and competitive influences. Differences in enrollment prospects arising from differences in many of the population characteristics and origins of students are directly considered for each institution in the projection model. Less tangible attractiveness influences are treated through the drawing power procedures described in Appendix D. The sector/type projections provided in Tables 60-63 reflect the combined effect of the institutional differences. While institutional enrollment shares are allowed to vary to some degree, these projections are still essentially "status quo" projections since participation and retention/flow rates were projected to remain fixed near current levels.

The detailed projection tables on the following pages mirror the recent rise in two-year and community college enrollments. The greater attendance of older students at these institutions should moderate but not fully overcome the effects of the high school graduate decline. Full-time undergraduates are projected to decline by 24 percent by 1992 at both independent and State University institutions, by ten percent at proprietary institutions, and by eight percent at City University institutions. Enrollment trends are expected to vary considerably among four-year institutions, depending on the relative attractiveness of each institution, its location, the types or pools of students it draws from, and management initiatives. The greatest diversity among institutions with respect to these characteristics is found in the independent sector.

Projections for City University show less decline than for other sectors or types of institutions primarily due to its location in New York City, which is projected to experience less population decline in the college age groups than other regions. The City University may also benefit from the growth of minority groups in New York City, since it has a strong history of serving these groups.

Many of the sector differences reflect the regional population differences. It is these differences that account for the higher graduate enrollment projections for State University and the independent colleges than for City University. The proprietary sector continues to show relatively small projected declines related to its strong enrollments in recent years.

Comparison of Sector and Regents Enrollment Projections

The Bulletin of the 1984 Plan called on each sector to develop enrollment projections through 1992-93. All sectors except State University projected increases for every category of enrollment (Table 69). In general, larger increases were projected for graduate enrollments and especially part-time graduate enrollments (four to 12 percent by 1992). This general pattern of higher projections for graduate enrollments also is seen in the Regents projections.

With a few exceptions, the sector-prepared projections are higher than the Regents projections. The full-time undergraduate projections are of the greatest interest, since full-time undergraduates constitute over half of the total enrollment. The Regents projections show approximately a 24 percent decline at both State University and independent institutions. State University projected a 0.9 percent decline for State-operated campuses and a 7.2 percent decline for community colleges, while the independent sector projected stable full-time undergraduate enrollments (for the 84 of 118 institutions included). City University projected increases for its colleges, but the difference from the Regents projection is smaller because of relatively smaller declines projected by the Regents for this sector. Table 69 compares the degrees of change projected by the sectors and the Department. Using projections included in the 1976 Statewide Plan as a base, Table 70 compares the sectors' and Regents 1976 projected enrollments for 1980 with the actual 1980 enrollments and indicates the variance from the actual figures.

It is not possible to compare precisely the projections produced by the sectors and the Department since each employs a unique methodology to calculate its projections and bases these on varying assumptions for the future. Timing of the calculations of the projections is also a factor. For example, where the Regents projections are based on enrollment data available in June 1984, the sectors vary in the dates on which their projections are prepared. State University's projections, for instance, must be calculated on the last Board of Trustees approved enrollment, which were adopted in May of 1983. Time lag is one of the variables which undoubtedly accounts for some of the differences between sector and Regents projections. Specific information on the assumptions underlying the sector projections was not provided; therefore only general conclusions can be drawn to partially explain the differences between the Regents and sector projections.

The projections provided by the independent and proprietary sectors are aggregations of figures supplied by each member institution. Consequently, no uniform set of assumptions can be identified. It is reasonable to assume that each institution incorporated in its calculations initiatives designed to improve its attractiveness to students. Such efforts may well have a positive effect on enrollments; however, it is doubtful that the final result will be as large as suggested by the aggregation of the institutional projections. It should be noted that the Commission on Independent Colleges and Universities submitted aggregations of institutional projections made by 84 institutions. To obtain a complete projection for the independent sector, the Education Department assumed that the percent change projected for the 84 institutions would hold for the entire sector.

State University and City University also build campus-based initiatives and institutional situations into their projections through a consultative process between each campus and central office. The central office involvement balances individual campus expectations somewhat, as does the recognition of probable State appropriations for support of the public sectors. While specific information on assumptions is not available, it can be concluded that the projections for both sectors include increased participation and retention rates and may be based on different and more optimistic population projections than those used by the Department.

Three factors may be cited as possible partial explanations of the differences between the sectors' own projections and the Regents projections. First, institutions may assume that the pools of potential students will increase; i.e., increased participation rates of adults, minority group members, and other groups that historically have not been well represented in postsecondary education. Second, institutions may assume that new initiatives on their part will be at least as effective in attracting students as have past initiatives. Third, institutions may assume that the trends of rising participation rates of recent years, which resulted from both broad social changes and changing economic conditions, will continue or, at least, that they will not reverse. While such assumptions are not unreasonable, the Education Department has not seen evidence to support such conclusions nor to substantiate the extent to which these factors may alter the influence of the demographic factor. Therefore, these factors have not been built into the Department projections. The Regents projections are based on both historical trend data and official demographic projections for New York State. Although it is possible that the more optimistic future envisioned by the sectors may come to pass, and indeed the Regents encourage them in their efforts to create a more expansive future for higher education, the Regents also have concluded that, for planning purposes, the enrollment projections developed by the Department are more realistic. They further encourage the Department and the sectors to continue to work cooperatively on the development of enrollment projections.

Actions

During the period of this Plan, the Regents and the Department will:

18-a. Work closely with the central organizations of the four sectors in developing and refining enrollment projections with consideration for differences in both the enrollment approach for each organization and the utilization of results.

Table 60

NEW YORK STATE
Regents Enrollment Projections for Full-Time Undergraduates
1985-1992

	Fall 1983	Fall 1985	Fall 1986	Fall 1987	Fall 1988		Fall 1992	
					Low[1]	High[1]	Low[1]	High[1]
State University								
Four-Year[2]	111,577	105,700	102,350	99,900	95,700	101,600	82,050	88,900
Agric.& Tech.	19,882	19,150	18,400	18,050	17,550	18,650	13,650	14,800
Community Colleges	95,929	91,150	88,350	87,050	84,750	90,000	69,650	75,450
Total	227,388	216,000	209,100	205,000	198,000	210,250	165,350	179,150
City University								
Senior Colleges	67,648	65,250	64,000	63,050	61,300	65,100	59,300	64,250
Community Colleges	33,542	34,950	34,250	33,450	32,650	34,700	30,400	32,900
Total	101,190	100,200	98,250	96,500	93,950	99,800	89,700	97,150
Independent								
Four-Year	211,296	207,050	201,250	194,650	185,200	196,650	155,300	168,200
Two-Year	10,007	9,450	9,100	8,750	8,400	8,900	6,600	7,150
Total	221,303	216,500	210,350	203,400	193,600	205,550	161,900	175,350
Proprietary								
Total	23,291	22,450	22,050	21,900	21,300	22,650	19,500	21,150
GRAND TOTAL	573,172	555,150	539,750	526,300	506,850	538,250	436,450	472,800

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[1] Range based on ±3 percent for 1988 and ±4 percent for 1992.

[2] Fashion Institute of Technology is included in the community college total and not the four-year total.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 61

NEW YORK STATE
Regents Enrollment Projections for Part-Time Undergraduates
1985-1992

	Fall 1983	Fall 1985	Fall 1986	Fall 1987	Fall 1988		Fall 1992	
					Low[1]	High[1]	Low[1]	High[1]
State University								
Four-Year[2]	23,907	24,400	24,450	24,450	23,800	25,300	23,350	25,350
Agric.& Tech.	8,060	8,250	8,250	8,300	8,050	8,550	7,950	8,600
Community Colleges	88,919	91,350	91,650	91,950	89,500	95,000	88,450	95,800
Total	120,886	124,000	124,350	124,700	121,350	128,850	119,750	129,750
City University								
Senior Colleges	39,059	39,300	39,000	38,750	37,350	39,650	35,750	38,750
Community Colleges	22,275	22,150	22,000	21,850	21,050	22,350	20,100	21,800
Total	61,334	61,450	61,000	60,600	58,400	62,000	55,850	60,550
Independent								
Four-Year	64,137	65,400	65,400	65,400	63,450	67,400	62,050	67,250
Two-Year	3,356	3,400	3,400	3,400	3,300	3,500	3,200	3,450
Total	67,493	68,800	68,800	68,800	66,750	70,900	65,250	70,700
Proprietary								
Total	6,595	6,100	6,100	6,100	5,900	6,250	5,750	6,200
GRAND TOTAL	256,308	260,350	260,250	260,200	252,400	268,000	246,600	267,200

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[1] Range based on ± 3 percent for 1988 and ± 4 percent for 1992.

[2] Fashion Institute of Technology is included in the community college total and not the four-year total.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 62

NEW YORK STATE
Regents Enrollment Projections for Graduate Students
1985-1992

	Fall 1983	Fall 1985	Fall 1986	Fall 1987	Fall 1988		Fall 1992	
					Low	High	Low	High
Full-Time								
State University	11,052	11,300	11,350	11,400	11,050	11,750	10,800	11,700
City University	5,036	5,050	5,050	5,050	4,900	5,200	4,700	5,100
Independent	30,883	30,400	30,400	30,450	29,550	31,400	28,800	31,200
Proprietary	31	60	60	60	50	70	50	70
Total	47,002	46,810	46,860	46,960	45,550	48,420	44,350	48,070
Part-Time								
State University	16,234	16,700	16,950	17,150	16,850	17,900	17,100	18,500
City University	14,137	14,350	14,400	14,400	14,000	14,850	13,700	14,850
Independent	67,347	70,150	70,800	71,500	70,000	74,350	70,400	76,250
Proprietary	0	0	0	0	0	0	0	0
Total	97,718	101,200	102,150	103,050	100,850	107,100	101,200	109,600
GRAND TOTAL	144,720	148,010	149,010	150,010	146,400	155,520	145,550	157,670

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[1] Range based on ± 3 percent for 1988 and ± 4 percent for 1992.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 63

NEW YORK STATE
Regents Enrollment Projections for First-Professional Students
1985-1992

	Fall 1983	Fall 1985	Fall 1986	Fall 1987	Fall 1988		Fall 1992	
					Low	High	Low	High
Full-Time								
State University	4,246	4,250	4,250	4,250	4,100	4,400	4,100	4,400
City University	138	450	450	450	440	460	430	470
Independent	18,033	18,050	18,050	18,050	17,500	18,600	17,350	18,750
Total	22,417	22,750	22,750	22,750	22,040	23,460	21,880	23,620
Part-Time								
State University	8	10	10	10	5	15	5	15
City University	0	0	0	0	0	0	0	0
Independent	2,550	2,550	2,550	2,550	2,450	2,650	2,450	2,650
Total	2,558	2,560	2,560	2,560	2,455	2,665	2,455	2,665
GRAND TOTAL	24,975	25,310	25,310	25,310	24,495	26,125	24,335	26,285

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[1] Range based on ±3 percent for 1988 and ±4 percent for 1992.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 64
NEW YORK STATE
Sector- and Regents-Prepared Enrollment Projections
Full-Time Undergraduate

Enrollment at	Prepared by	Actual 1983	Projected 1988 Low	Projected 1988 High	Projected 1992 Low	Projected 1992 High	Percent Change from 1983-1992 Low	Percent Change from 1983-1992 High
State University State-Operated Colleges		131,459						
	State University		127,694	132,906	126,391	134,209	-3.9%	+2.1%
	Regents		113,250	120,250	95,700	103,700	-27.2%	-21.1%
Community Colleges		95,929						
	State University		87,209	90,768	86,319	91,658	-10.0%	-4.5%
	Regents		84,750	90,000	69,650	75,450	-27.4%	-21.3%
City University Senior Colleges		67,648						
	City University		68,218		67,565	69,563	-0.1%	+2.8%
	Regents		61,300	65,100	59,500	64,250	-12.0%	-5.0%
Community Colleges		33,542						
	City University		36,071		36,499	37,638	+8.8%	+12.2%
	Regents		32,650	34,700	30,400	32,900	-9.4%	-1.9%
Independent		221,303						
	Independent*		223,312		216,949	226,211	-2.0%	+2.2%
	Regents		193,600	205,500	161,900	175,350	-26.8%	-20.8%
Proprietary		23,291						
	Proprietary**		25,598		--	--	--	--
	Regents		21,300	22,650	19,500	21,150	-16.3%	-9.2%

*Aggregations of institutional projections made by 84 of 118 institutions were provided by the Independent sector. The overall change projected for the 84 institutions was applied to the actual 1983 enrollment of the Independent sector to obtain a projection for that sector.

**Aggregations of projections for 24 of 28 institutions, adjusted to a sector total as was done for the independent sector.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 65
NEW YORK STATE
Sector- and Regents-Prepared Enrollment Projections
Part-Time Undergraduate

<table>
<tr><th rowspan="3">Enrollment at</th><th rowspan="3">Prepared by</th><th rowspan="3">Actual 1983</th><th colspan="4">Projected</th><th colspan="2">Percent Change from 1983-1992</th></tr>
<tr><th colspan="2">1988</th><th colspan="2">1992</th><th></th><th></th></tr>
<tr><th>Low</th><th>High</th><th>Low</th><th>High</th><th>Low</th><th>High</th></tr>
<tr><td>State University
State-Operated Colleges</td><td></td><td>31,967</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>State University</td><td></td><td>30,620</td><td>31,870</td><td>30,308</td><td>32,183</td><td>-5.2%</td><td>+0.7%</td></tr>
<tr><td></td><td>Regents</td><td></td><td>31,850</td><td>33,850</td><td>31,300</td><td>33,950</td><td>-2.1%</td><td>+6.2%</td></tr>
<tr><td>Community Colleges</td><td></td><td>88,919</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>State University</td><td></td><td>95,417</td><td>99,312</td><td>94,443</td><td>100,285</td><td>+6.2%</td><td>+12.8%</td></tr>
<tr><td></td><td>Regents</td><td></td><td>89,500</td><td>95,000</td><td>88,450</td><td>95,800</td><td>-0.5%</td><td>+7.7%</td></tr>
<tr><td>City University
Senior Colleges</td><td></td><td>39,059</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>City University</td><td></td><td colspan="2">39,641</td><td>39,289</td><td>40,443</td><td>+0.6%</td><td>+3.6%</td></tr>
<tr><td></td><td>Regents</td><td></td><td>37,350</td><td>39,650</td><td>35,750</td><td>38,750</td><td>-8.5%</td><td>-0.8%</td></tr>
<tr><td>Community Colleges</td><td></td><td>22,275</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>City University</td><td></td><td colspan="2">23,106</td><td>23,084</td><td>23,800</td><td>+3.6%</td><td>+6.8%</td></tr>
<tr><td></td><td>Regents</td><td></td><td>21,050</td><td>22,350</td><td>20,100</td><td>21,800</td><td>-9.8%</td><td>-2.1%</td></tr>
<tr><td>Independent</td><td></td><td>67,493</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Independent*</td><td></td><td colspan="2">76,400</td><td>76,400</td><td>80,845</td><td>+13.2%</td><td>+19.8%</td></tr>
<tr><td></td><td>Regents</td><td></td><td>66,750</td><td>70,900</td><td>65,250</td><td>70,100</td><td>-3.3%</td><td>+3.9%</td></tr>
<tr><td>Proprietary</td><td></td><td>6,595</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Proprietary**</td><td></td><td colspan="2">8,299</td><td>--</td><td>--</td><td>--</td><td>--</td></tr>
<tr><td></td><td>Regents</td><td></td><td>5,900</td><td>6,250</td><td>5,750</td><td>6,200</td><td>-12.8%</td><td>-6.0%</td></tr>
</table>

*Aggregations of institutional projections made by 84 of 118 institutions were provided by the Independent sector. The overall change projected for the 84 institutions was applied to the actual 1983 enrollment of the Independent sector to obtain a projection for that sector.

**Aggregations of projections for 24 of 28 institutions, adjusted to a sector total as was done for the independent sector.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 66

NEW YORK STATE
Sector- and Regents-Prepared Enrollment Projections
Full-Time Graduate

Enrollment at	Prepared by	Actual 1983	Projected 1988 Low	Projected 1988 High	Projected 1992 Low	Projected 1992 High	Percent Change from 1983-1992 Low	Percent Change from 1983-1992 High
State University		11,052						
	State University		10,787	11,227	10,677	11,337	-3.4%	+2.6%
	Regents		11,050	11,750	10,800	11,700	-2.3%	+5.9%
City University		5,036*						
	City University		6,956		6,896	7,113	+36.9%	+41.2%
	Regents		4,900	5,200	4,700	5,100	-6.7%	+1.3%
Independent		30,883						
	Independent		32,967		31,967	34,555	+3.5%	+11.9%
	Regents		29,550	31,400	28,300	31,200	-6.7%	+1.0%
Proprietary		31						
	Proprietary		180		--	--	--	--
	Regents		50	70	50	70	+61.3%	+125.8%

*The 1983 figure used by City University in developing its projections was 6,707. The difference in the figures is the use by City University of 9 rather than 12 credits in determining full-time status. Using 6,707 as the base, the enrollment changes projected by City University for 1992 are +2.8% and +6.1%.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 67
NEW YORK STATE
Sector- and Regents-Prepared Enrollment Projections
Part-Time Graduate

Enrollment at	Prepared by	Actual 1983	Projected 1988 Low	Projected 1988 High	Projected 1992 Low	Projected 1992 High	Percent Change from 1983-1992 Low	Percent Change from 1983-1992 High
State University		16,234						
	State University		17,094	17,792	16,920	17,966	+4.2%	+10.7%
	Regents		16,850	17,900	17,100	18,500	+5.3%	+14.0%
City University		14,137*						
	City University		12,380		12,766	13,156	-9.7%	-6.9%
	Regents		14,000	14,850	13,700	14,850	-3.1%	+5.0%
Independent		67,347						
	Independent		74,194		73,267	79,183	+8.8%	+17.6%
	Regents		70,000	74,350	70,400	76,250	+4.5%	+13.2%

*The 1983 figure used by City University in developing its projections was 12,492. The difference in the figures is the use by City University of 9 rather than 12 credits in determining full-time status. Using 12,482 as the base, the enrollment changes projected by City University for 1992 are +2.2% and +5.3%.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 68
NEW YORK STATE
Sector- and Regents-Prepared Enrollment Projections
Full-Time First Professional

Enrollment at	Prepared by	Actual 1983	1988 Low	1988 High	1992 Low	1992 High	Percent Change 1992 Low	Percent Change 1992 High
State University State-Operated Colleges		4,246						
	State University		4,403	4,582	4,358	4,627	+2.6%	+9.0%
	Regents		4,100	4,400	4,100	4,400	-3.4%	+3.6%
City University		138						
	City University		494		493	494	+357.2%*	+352.9%*
	Regents		440	460	430	470	+211.6%	+240.6%
Independent		18,033						
	Independent		17,988		17,873	18,100	-0.9%	+0.4%
	Regents		17,500	18,600	17,350	18,750	-3.8%	+4.0%

Part-Time First Professional

Enrollment at	Prepared by	Actual 1983	1988 Low	1988 High	1992 Low	1992 High	Percent Change 1992 Low	Percent Change 1992 High
State University State-Operated Colleges		8						
	State University		7	7	7	7	-12.5%	-12.5%
	Regents		5	15	5	15	-37.5%	+87.5%
City University		0						
	City University		13		12	13	--	--
	Regents		0	0	0	0	--	--
Independent		2,550						
	Independent		1,788		1,078	1,754	-57.7%	-31.2%
	Regents		2,450	2,650	2,450	2,650	-3.9%	+3.9%

*Due to expected growth at CUNY Law School

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 69

COMPARISON OF ENROLLMENT PROJECTIONS PREPARED BY EACH SECTOR WITH REGENTS PROJECTIONS

	Percent Change Projected between 1983 and 1992	
	SECTOR	REGENTS
Full-Time Undergraduate		
SUNY State-Operated	-0.9%	-24.2%
SUNY Community College	-7.2	-24.4
CUNY Senior College	+1.4	-8.5
CUNY Community College	+10.5	-5.6
Independent*	+0.1	-23.8
Proprietary**	--	-12.7
Part-Time Undergraduate		
SUNY State-Operated	-2.3	+2.1
SUNY Community College	+9.5	+3.6
CUNY Senior Colleges	+2.1	-4.6
CUNY Community College	+5.2	-5.9
Independent*	+16.3	+0.3
Proprietary**	--	-9.4
Full-Time Graduate		
SUNY	-0.4	+1.8
CUNY	+4.4	-2.7
Independent	+10.3	-2.9
Proprietary**	—	***
Part-Time Graduate		
SUNY	+7.4	+9.6
CUNY	+3.8	+1.0
Independent	+12.1	+8.9

*Independent Sector Projections based on 84 of 118 institutions.
**Proprietary Sector did not make projections for 1992.
***Only one institution has graduate enrollment in the Proprietary Sector.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 70

DIFFERENCES BETWEEN ACTUAL FALL 1980 ENROLLMENTS AND PROJECTIONS OF 1980 ENROLLMENTS IN THE SECTOR MASTER PLANS OF 1976 AND IN THE 1976 REGENTS STATEWIDE PLAN

	Low		High		Mean of High and Low	
Total Headcount*	Regents	Sector	Regents	Sector	Regents	Sector
State University	-3.7%	+4.0%	-0.6%	+7.6%	-2.2%	+5.8%
City University**	+15.9%	+15.9%	+22.5%	+22.5%	+19.2%	+19.2%
Independent	-2.8%	+5.2%	+1.5%	+5.2%	-0.7%	+5.2%
Total	+0.2%	+6.7%	+4.5%	+9.3%	+2.3%	+8.0%

In the 1976 Statewide Plan, the sectors and the Department each devised high and low enrollment projections for future years. The figures above indicate the degree to which these projections for 1980 deviated from the actual enrollments for that year.

*Proprietary enrollments in 1980 were excluded from the calculations as they were not included in the projections.

**Regents adopted CUNY projections due to uncertainties regarding enrollment related policies at CUNY.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 71

NEW YORK STATE
SECTOR ENROLLMENT SHARES FOR TOTAL ENROLLMENT
LEVEL BY SECTOR 1961, 1965, 1970, 1973-1983

LEVEL/SECTOR SHARES	1961*	1965	1970	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
UNDERGRADUATE (4-Yr. Institutions)														
SUNY	35.9	20.0	23.8	24.3	24.4	24.9	25.9	25.8	26.3	26.5	27.2	27.1	27.2	27.3
CUNY[1]		21.8	28.0	32.2	31.9	30.5	25.7	24.4	23.0	22.1	20.9	20.3	20.5	20.0
Independent	64.1	58.2	48.2	43.5	42.9	43.9	47.7	48.9	49.8	50.4	50.9	51.4	51.4	51.7
Proprietary[2]	0.0	0.0	0.0	0.0	0.7	0.7	0.8	0.8	0.9	1.0	1.0	1.0	0.9	1.0
Total 4-Yr. Insts.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
UNDERGRADUATE (2-Yr. Institutions)														
SUNY	86.7	72.8	74.9	71.7	68.9	69.9	69.7	69.6	70.9	71.1	71.8	71.8	71.6	68.4
CUNY		17.1	20.8	24.6	23.9	21.9	19.7	19.1	17.9	17.3	16.5	16.3	17.2	18.8
Independent	13.3	10.2	4.3	3.7	3.5	3.4	4.1	4.5	4.6	4.9	5.0	4.8	4.6	4.5
Proprietary	0.0	0.0	0.0	0.0	3.7	4.8	6.5	6.8	6.7	6.7	6.7	7.1	7.3	8.3
Total 2-Yr. Insts.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
GRADUATE														
SUNY	17.7	11.3	21.7	21.6	21.7	22.1	21.6	21.0	20.6	20.2	20.4	19.4	19.0	18.9
CUNY		16.9	19.1	19.7	18.9	15.8	12.2	10.6	10.9	11.1	11.1	11.5	12.5	13.2
Independent	82.3	71.8	59.2	58.7	59.4	62.0	66.2	68.4	68.5	68.7	68.6	69.0	68.5	67.9
Proprietary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**
Total Graduate	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
FIRST-PROFESSIONAL														
SUNY	10.0	16.8	17.3	18.9	19.1	19.7	18.7	17.9	17.4	17.6	17.6	17.2	17.2	17.0
CUNY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Independent	90.0	83.2	82.7	81.1	80.9	80.3	81.3	82.1	82.6	82.4	82.4	82.8	82.8	82.4
Total First-Prof.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
LEVEL SHARES														
Total Undergraduate:														
4-Yr. Institutions	69.8	65.1	57.3	55.9	55.5	55.2	55.4	55.0	55.0	55.0	55.0	54.6	54.5	53.3
2-Yr. Institutions	8.5	13.6	22.3	23.6	24.5	25.8	26.3	27.0	27.1	27.3	27.6	28.2	28.7	29.7
Total Graduate	18.4	18.3	18.3	18.5	18.1	17.1	16.1	15.7	15.5	15.3	14.9	14.6	14.2	14.5
Total First-Professional	3.4	3.0	2.1	2.0	2.0	1.9	2.1	2.3	2.4	2.4	2.4	2.5	2.5	2.5
State Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
SECTOR SHARES														
Total SUNY	36.0	25.5	34.7	34.9	34.7	36.0	36.6	36.7	37.2	37.5	38.3	38.4	38.3	38.0
Total CUNY		19.6	24.2	27.5	27.0	25.2	21.4	20.2	19.2	18.6	17.7	17.5	17.9	18.2
Total Independent	64.0	54.9	41.1	37.6	37.0	37.2	39.9	40.8	41.3	41.5	41.6	41.6	41.2	40.8
Total Proprietary	0.0	0.0	0.0	0.0	1.3	1.6	2.1	2.3	2.3	2.4	2.4	2.5	2.6	3.0
State Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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*1961 was the first year when graduate and first-professional enrollment figures were reported separately.

**Less than .05 percent.

[1] New York City Technical College is included with 4-year institutions.

[2] Laboratory Institute of Merchandising is included with 4-year institutions.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 72

NEW YORK STATE
TOTAL ENROLLMENT, LEVEL BY SECTOR 1961, 1965, 1970, 1973-1983

LEVEL/SECTOR	1961*	1965	1970	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
UNDERGRADUATE (4-Yr. Institutions)														
SUNY	84,613	58,352	104,230	119,392	127,137	136,716	134,414	133,149	135,228	138,753	145,478	146,609	146,175	145,606
CUNY[1]		63,754	122,503	158,376	166,107	167,548	133,235	125,818	118,311	115,741	111,738	110,851	110,069	106,707
Independent	151,134	170,170	210,983	213,887	223,250	240,677	247,495	252,020	256,430	264,145	272,783	278,273	276,878	275,433
Proprietary[2]	0	0	0	0	3,710	3,710	4,184	4,280	4,748	5,332	5,439	5,410	5,110	5,283
Total 4-Yr. Insts.	235,747	292,276	437,716	491,655	520,204	548,651	519,328	515,267	514,717	523,971	535,438	541,143	538,232	533,029
UNDERGRADUATE (2-Yr. institutions)														
SUNY	24,810	44,459	127,848	148,756	157,898	179,469	172,022	175,958	179,351	184,490	193,149	200,713	203,074	202,668
CUNY		10,434	35,545	51,051	54,861	56,286	48,616	48,155	45,198	44,961	44,477	45,638	48,643	55,817
Independent	3,793	6,208	7,273	7,624	7,939	8,646	10,119	11,432	11,570	12,606	13,429	13,297	13,015	13,363
Proprietary	0	0	0	0	8,487	12,408	16,103	17,218	16,930	17,257	17,913	19,729	20,805	24,603
Total 2-Yr. Insts.	28,603	61,101	170,666	207,431	229,185	256,809	246,860	252,763	253,049	259,314	268,968	279,377	283,537	296,451
GRADUATE														
SUNY	10,993	9,274	30,421	35,081	36,697	37,717	32,656	30,976	29,819	29,407	29,598	28,175	26,661	27,286
CUNY		13,858	26,653	32,086	31,988	26,940	18,503	15,597	15,788	16,170	16,058	16,741	17,585	19,173
Independent	51,075	58,899	82,806	95,324	100,597	105,626	100,096	100,640	99,155	99,839	99,619	100,102	96,337	98,230
Proprietary	0	0	0	0	0	0	0	0	0	0	0	0	0	31
Total Graduate	62,068	82,031	139,880	162,491	169,282	170,283	151,255	147,213	144,762	145,416	145,275	145,018	140,583	144,720
FIRST-PROFESSIONAL														
SUNY	1,129	2,230	2,791	3,347	3,510	3,712	3,763	3,863	3,963	4,058	4,190	4,244	4,260	4,254
CUNY		0	0	0	0	0	0	0	0	0	0	0	0	138
Independent	10,196	11,070	13,337	14,338	14,821	15,123	16,387	17,755	18,829	19,064	19,617	20,499	20,535	20,583
Total First-Prof.	11,325	13,300	16,128	17,685	18,331	18,835	20,150	21,618	22,792	23,122	23,807	24,743	24,795	24,975
LEVEL														
Undergrad. 4-Yr. Insts.	235,747	292,276	437,716	491,655	520,204	548,651	519,328	515,267	514,717	523,971	535,438	541,143	538,232	533,029
Undergrad. 2-Yr. insts.	28,603	61,101	170,666	207,431	229,185	256,809	246,860	252,763	253,049	259,314	268,968	279,377	283,537	296,451
Graduate	62,068	82,031	139,880	162,491	169,282	170,283	151,255	147,213	144,762	145,416	145,275	145,018	140,583	144,720
First-Professional	11,325	13,300	16,128	17,685	18,331	18,835	20,150	21,618	22,792	23,122	23,807	24,743	24,795	24,975
State Total	337,743	448,708	764,390	879,262	937,002	994,578	937,593	936,861	935,320	951,823	973,488	990,281	987,147	999,175
SECTOR														
SUNY	121,545	114,315	265,290	306,576	325,242	357,614	342,855	343,946	348,361	356,708	372,415	379,741	378,170	379,814
CUNY		88,046	184,701	241,513	252,956	250,774	200,354	189,570	179,297	176,872	172,273	173,230	176,297	181,835
Independent	216,198	246,347	314,399	331,173	346,608	370,072	374,097	381,847	385,984	395,654	405,448	412,171	406,765	407,609
Proprietary	0	0	0	0	12,197	16,118	20,287	21,498	21,678	22,589	23,352	25,139	25,915	29,917
State Total	337,743	448,708	764,390	879,262	937.002	994,578	937,593	936,861	935,320	951,823	973,488	990,281	987,147	999,175

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*1961 was the first year when graduate and first-professional enrollment figures were reported separately.

[1] New York City Technical College is included with 4-year institutions.

[2] Laboratory Institute of Merchandising is included with 4-year institutions.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 73

NEW YORK STATE
SECTOR ENROLLMENT SHARES FOR FULL-TIME ENROLLMENT
LEVEL BY SECTOR 1961, 1965, 1970, 1973-1983

LEVEL/SECTOR SHARES	1961*	1965	1970	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
UNDERGRADUATE (4-Yr. Institutions)														
SUNY	35.0	21.4	26.5	27.9	28.0	28.6	28.8	28.4	28.4	28.3	28.9	28.9	29.1	29.1
CUNY[1]		19.6	22.7	27.1	26.8	25.3	22.4	22.1	20.9	20.1	18.5	17.9	17.6	17.0
Independent	65.0	59.0	50.8	44.9	44.8	45.6	48.3	49.0	50.2	51.0	52.0	52.5	52.7	53.2
Proprietary[2]	0.0	0.0	0.0	0.0	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7
Total 4-Yr Insts.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
UNDERGRADUATE (2-Yr. Institutions)														
SUNY	85.6	72.6	74.6	71.9	68.4	68.0	66.0	63.6	64.3	64.6	66.5	66.3	65.6	63.6
CUNY		16.1	19.5	22.8	21.7	20.6	20.6	22.2	21.2	20.8	18.2	17.7	17.9	19.0
Independent	14.4	11.3	5.9	5.4	4.7	4.9	5.4	5.8	5.8	5.8	6.2	5.9	5.9	5.7
Proprietary	0.0	0.0	0.0	0.0	5.1	6.5	8.0	8.5	8.5	8.8	9.1	10.1	10.6	11.7
Total 2-Yr. Insts.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
GRADUATE														
SUNY	10.2	13.9	24.3	24.6	24.6	25.7	24.2	23.7	23.2	23.9	24.5	23.9	23.7	23.5
CUNY		5.1	8.3	11.0	12.5	9.7	9.2	9.3	10.1	10.2	9.6	10.0	11.0	10.7
Independent	89.8	81.0	67.4	64.4	63.0	64.7	66.6	67.0	66.7	65.9	66.4	66.0	65.3	65.7
Proprietary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Graduate	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
FIRST-PROFESSIONAL														
SUNY	11.7	18.3	19.3	20.4	20.6	21.5	20.4	19.5	19.0	19.3	19.5	19.0	19.1	18.9
CUNY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Independent	88.3	81.7	80.7	79.6	79.4	78.5	79.6	80.5	81.0	80.7	80.5	81.0	79.9	80.5
Total First-Prof.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
LEVEL SHARES														
Total Undergraduate:														
4-Yr. Institutions	79.5	73.4	68.6	66.8	66.2	65.3	64.6	63.7	64.0	63.9	63.6	63.2	62.8	61.8
2-Yr. Institutions	9.7	14.9	20.3	22.1	23.0	24.3	24.8	25.5	25.1	25.3	25.5	25.9	26.5	27.4
Total Graduate	6.5	8.0	8.2	8.1	7.8	7.6	7.6	7.5	7.5	7.4	7.5	7.4	7.2	7.3
Total First-Professional	4.2	3.7	2.9	3.0	3.0	2.8	3.1	3.3	3.4	3.4	3.4	3.5	3.5	3.5
State Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
SECTOR SHARES														
Total SUNY	37.3	28.3	35.9	37.2	36.8	37.7	37.4	36.7	36.7	36.8	37.8	37.9	38.0	37.8
Total CUNY		17.2	20.2	24.0	23.7	22.3	20.3	20.5	19.4	18.9	17.1	16.6	16.6	16.6
Total Independent	62.6	54.5	43.9	38.8	38.0	38.1	40.0	40.3	41.4	41.7	42.3	42.5	42.2	42.0
Total Proprietary	0.0	0.0	0.0	0.0	1.5	1.9	2.3	2.5	2.5	2.6	2.8	3.0	3.2	3.6
State Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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*1961 was the first year when graduate and first-professional enrollment figures were reported separately.

[1] New York City Technical College is included with 4-year institutions.

[2] Laboratory Institute of Merchandising is included with 4-year institutions.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 74

NEW YORK STATE
FULL-TIME ENROLLMENT, LEVEL BY SECTOR 1961, 1965, 1970, 1973-1983

LEVEL/SECTOR	1961*	1965	1970	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	Opening Fall 1983
UNDERGRADUATE (4-Yr. Institutions)														
SUNY	64,087	52,197	89,938	101,504	106,830	114,297	112,148	109,894	109,768	111,147	115,345	116,376	115,970	115,507
CUNY[1]		47,771	77,045	98,506	102,301	101,361	87,023	85,751	80,648	79,117	74,036	72,142	70,384	67,648
Independent	119,024	143,787	172,327	163,238	170,889	182,655	187,761	189,685	193,954	200,504	207,771	211,361	210,189	211,296
Proprietary[2]	0	0	0	0	1,691	1,878	1,847	2,034	2,213	2,369	2,571	2,641	2,625	2,711
Total 4-Yr. Insts.	183,111	243,755	339,310	363,248	381,711	400,191	388,779	387,364	386,583	393,137	399,723	402,520	399,168	397,162
UNDERGRADUATE (2-Yr. Institutions)														
SUNY	19,187	35,896	74,871	86,372	90,936	101,495	98,540	98,729	97,748	100,435	106,764	109,485	110,295	111,881
CUNY		7,969	19,610	27,387	28,857	30,682	30,766	34,487	32,282	32,410	29,130	29,302	30,089	33,542
Independent	3,218	5,563	5,935	6,450	6,275	7,361	8,110	8,981	8,835	9,010	9,870	9,788	9,875	10,007
Proprietary	0	0	0	0	6,808	9,665	11,952	13,129	12,895	13,656	14,668	16,656	17,877	20,380
Total 2-Yr. Insts.	22,405	49,428	100,416	120,209	132,876	149,183	149,368	155,326	151,960	155,511	160,432	165,231	168,136	176,010
GRADUATE														
SUNY	1,538	3,687	9,934	10,767	11,081	11,975	11,027	10,809	10,602	10,888	11,261	11,293	10,818	11,052
CUNY		1,363	3,376	4,842	5,613	4,515	4,201	4,242	4,606	4,657	4,522	4,743	5,000	5,036
Independent	13,488	21,527	27,489	28,214	28,385	30,185	30,340	30,562	30,417	30,042	31,129	31,179	29,816	30,883
Proprietary	0	0	0	0	0	0	0	0	0	0	0	0	0	31
Total Graduate	15,026	26,577	40,799	43,823	45,079	46,675	45,568	45,613	45,625	45,587	46,912	47,215	45,634	47,002
FIRST-PROFESSIONAL														
SUNY	1,129	2.220	2,772	3,345	3,509	3,693	3,746	3,863	3,963	4,058	4,182	4,235	4,256	4,246
CUNY		0	0	0	0	0	0	0	0	0	0	0	0	138
Independent	8,553	9,923	11,611	13,082	13,543	13,504	14,627	15,904	16,901	16,978	17,281	18,031	18,012	18,033
Total First-Prof.	9,682	12,143	14,383	16,427	17,052	17,197	18,373	19,767	20,864	21,036	21,463	22,266	22,268	22,417
LEVEL														
Undergrad. 4-Yr. Insts.	183,111	243,755	339,310	363,248	381,711	400,191	388,779	387,364	386,583	393,137	399,723	402,520	399,168	397,162
Undergrad. 2-Yr. Insts.	22,405	49,428	100,416	120,209	132,876	149,183	149,368	155,326	151,960	155,511	160,432	165,231	168,136	176,010
Graduate	15,026	26,577	40,799	43,823	45,079	46,675	45,568	45,613	45,625	45,587	46,912	47,215	45,634	47,002
First-Professional	9,682	12,143	14,383	16,427	17,052	17,197	18,373	19,767	20,864	21,036	21,463	22,266	22,268	22,417
State Total	230,224	331,903	494,908	543,707	576,718	613,246	602,088	608,070	604,832	615,271	628,530	637,232	635,206	642,591
SECTOR														
SUNY	85,941	94,000	177,515	201,988	212,356	231,460	225,461	223,295	222,081	226,528	237,552	241,389	241,339	242,686
CUNY		57,103	100,031	130,735	136,771	136,558	121,990	124,480	117,536	116,184	107,688	106,187	105,473	106,364
Independent	144,283	180,800	217,362	210,984	219,092	233,685	240,838	245,132	250,107	256,534	266,051	270,359	267,892	270,219
Proprietary	0	0	0	0	8,499	11,543	13,799	15,163	15,108	16,025	17,239	19,297	20,502	23,322
State Total	230,224	331,903	494,908	543,707	576,718	613,246	602,088	608,070	604,832	615,271	628,530	636,232	635,206	642,591

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*1961 was the first year when graduate and first-professional enrollment figures were reported separately.

[1] New York City Technical College is included with 4-year institutions.

[2] Laboratory Institute of Merchandising is included with 4-year institutions.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 75

SECTOR ENROLLMENT SHARES FOR PART-TIME ENROLLMENT LEVEL BY SECTOR 1961, 1965, 1970, 1973-1983

LEVEL/SECTOR SHARES	1961*	1965	1970	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
UNDERGRADUATE (4-Yr. Institutions)														
SUNY	39.0	12.7	14.5	13.9	14.7	15.1	17.1	18.2	19.9	21.1	22.2	21.8	21.7	22.2
CUNY[1]		32.9	46.2	46.6	46.1	44.6	35.4	31.3	29.4	28.0	27.8	27.9	28.5	28.7
Independent	61.0	54.4	39.3	39.4	37.8	39.1	45.8	48.7	48.8	48.6	47.9	48.3	48.0	47.2
Proprietary[2]	0.0	0.0	0.0	0.0	1.5	1.2	1.8	1.8	2.0	2.3	2.1	2.0	1.8	1.9
Total 4-Yr. Insts.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
UNDERGRADUATE (2-Yr. Institutions)														
SUNY	90.7	73.4	75.4	71.5	69.5	72.4	75.4	79.3	80.6	81.0	79.6	79.9	78.7	75.4
CUNY		21.1	22.7	27.1	27.0	23.8	18.3	14.0	12.8	12.1	14.1	14.3	16.1	18.5
Independent	9.3	5.5	1.9	1.3	1.7	1.2	2.1	2.5	2.7	3.5	3.3	3.1	2.7	2.8
Proprietary	0.0	0.0	0.0	0.0	1.7	2.5	4.3	4.2	4.0	3.5	3.0	2.7	2.5	3.3
Total 2-Yr. Insts.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
GRADUATE														
SUNY	20.1	10.1	20.7	20.5	20.6	20.8	20.5	19.8	19.4	18.6	18.6	17.3	16.7	16.6
CUNY		22.5	23.5	23.0	21.2	18.1	13.5	11.2	11.3	11.5	11.7	12.3	13.3	14.5
Independent	79.9	67.4	22.3	56.6	58.1	61.0	66.0	69.0	69.3	69.9	69.6	70.4	70.1	68.9
Total Graduate	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
FIRST-PROFESSIONAL														
SUNY	0.0	0.9	1.1	0.2	0.1	1.2	1.0	0.0	0.0	0.0	0.3	0.4	0.2	0.3
Independent	100.0	99.1	98.9	99.8	99.9	98.8	99.0	100.0	100.0	100.0	99.7	99.6	99.8	99.7
Total First-Prof.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
LEVEL SHARES														
Total Undergraduate:														
4-Yr. Institutions	49.0	41.5	36.5	38.3	38.4	38.9	38.9	38.9	38.8	38.9	39.3	39.3	39.5	38.1
2-Yr. Institutions	5.8	10.0	26.1	26.0	26.7	28.2	29.1	29.7	30.6	30.8	31.5	32.3	32.8	33.8
Total Graduate	43.8	47.5	36.8	35.4	34.5	32.4	31.5	30.9	30.0	29.7	28.5	27.7	27.0	27.4
Total First-Professional	1.5	1.0	0.6	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7
State Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
SECTOR SHARES														
Total SUNY	33.1	17.4	32.6	31.2	31.3	33.1	35.0	36.7	38.2	38.7	39.1	39.2	38.9	38.5
Total CUNY		26.5	31.4	33.0	32.2	30.0	23.4	19.8	18.7	18.0	18.7	19.0	20.1	21.2
Total Independent	66.9	56.1	36.0	35.8	35.4	35.8	39.7	41.6	41.1	41.3	40.4	40.2	39.5	38.5
Total Proprietary	0.0	0.0	0.0	0.0	1.0	1.2	1.9	1.9	2.0	2.0	1.8	1.6	1.5	1.8
State Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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*1961 was the first year when graduate and first-professional enrollment figures were reported separately.

[1] New York City Technical College is included with 4-year institutions.

[2] Laboratory Institute of Merchandising is included with 4-year institutions.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 76

NEW YORK STATE
PART-TIME ENROLLMENT, LEVEL BY SECTOR 1961, 1965, 1970, 1973-1983

LEVEL/SECTOR	1961*	1965	1970	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
UNDERGRADUATE (4-Yr. Institutions)														
SUNY	20,526	6,155	14,292	17,888	20,307	22,419	22,266	23,255	25,460	27,606	30,133	30,233	30,205	30,099
CUNY[1]		15,983	45,458	59,870	63,806	66,187	46,212	40,067	37,663	36,624	37,702	38,709	39,685	39,059
Independent	32,110	26,383	38,656	50,649	52,361	58,022	59,734	62,335	62,476	63,641	65,012	66,912	66,689	64,137
Proprietary[2]	0	0	0	0	2,019	1,832	2,337	2,246	2,535	2,963	2,868	2,769	2,485	2,572
Total 4-Yr. Insts.	52,636	48,521	98,406	128,407	138,493	148,460	130,549	127,903	128,134	130,834	135,715	138,623	139,064	135,867
UNDERGRADUATE (2-Yr. Institutions)														
SUNY	5,623	8,563	52,977	62,384	66,962	77,974	73,482	77,229	81,603	84,055	86,385	91,228	90,779	90,787
CUNY		2,465	15,935	23,664	26,004	25,604	17,850	13,668	12,916	12,551	15,347	16,336	18,554	22,275
Independent	575	645	1,338	1,174	1,664	1,305	2,009	2,451	2,735	3,596	3,559	3,509	3,140	3,356
Proprietary	0	0	0	0	1,679	2,743	4,151	4,089	4,035	3,601	3,245	3,073	2,928	4,023
Total 2-Yr. Insts.	6,198	11,673	70,250	87,222	96,309	107,626	97,492	97,437	101,289	103,803	108,536	114,146	115,401	120,441
GRADUATE														
SUNY	9,455	5,587	20,487	24,314	25,616	25,742	21,629	20,167	19,217	18,519	18,337	16,882	15,843	16,234
CUNY		12,495	23,277	27,244	26,375	22,425	14,302	11,355	11,182	11,513	11,536	11,998	12,585	14,137
Independent	37,587	37,372	55,317	67,110	72,212	75,441	69,756	70,078	68,738	69,797	68,490	68,923	66,521	67,347
Total Graduate	47,042	55,454	99,081	118,668	124,203	123,608	105,687	101,600	99,137	99,829	98,363	97,803	94,949	97,718
FIRST-PROFESSIONAL														
SUNY	0	10	19	2	1	19	17	0	0	0	8	9	4	8
Independent	1,643	1,147	1,726	1,256	1,278	1,619	1,760	1,851	1,928	2,086	2,336	2,468	2,523	2,550
Total First-Prof.	1,643	1,157	1,745	1,258	1,279	1,638	1,777	1,851	1,928	2,086	2,344	2,477	2,527	2,558
LEVEL														
Undergrad. 4-Yr. Insts.	52,636	48,521	98,406	128,407	138,493	148,460	130,549	127,903	128,134	130,834	135,715	138,623	139,064	135,867
Undergrad. 2-Yr. Insts.	6,198	11,673	70,250	87,222	96,309	107,626	97,492	97,437	101,289	103,803	108,536	114,146	115,401	120,441
Graduate	47,042	55,454	99,081	118,668	124,203	123,608	105,687	101,600	99,137	99,829	98,363	97,803	94,949	97,718
First-Professional	1,643	1,157	1,745	1,258	1,279	1,638	1,777	1,851	1,928	2,086	2,344	2,477	2,527	2,558
State Total	107,519	116,805	269,482	335,555	360,284	381,332	335,565	328,791	330,488	336,552	344,958	353,049	351,941	356,584
SECTOR														
SUNY	35,604	20,315	87,775	104,588	112,886	126,154	117,394	120,651	126,280	130,180	134,863	138,352	136,831	137,128
CUNY		30,943	84,670	110,778	116,185	114,216	78,364	65,090	61,761	60,638	64,585	67,043	70,824	75,471
Independent	71,915	65,547	97,037	120,189	127,515	136,387	133,259	136,715	135,877	139,120	139,397	141,812	138,873	137,390
Proprietary	0	0	0	0	3,698	4,575	6,488	6,335	6,570	6,564	6,113	5,842	5,413	6,595
State Total	107,519	116,805	269,482	335,555	360,284	381,332	335,565	328,791	330,488	336,552	344,958	353,049	351,941	356,584

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*1961 was the first year when graduate and first-professional enrollment figures were reported separately.

[1] New York City Technical College is included with 4-year institutions.

[2] Laboratory Institute of Merchandising is included with 4-year institutions.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 77

NEW YORK STATE ENROLLMENT SHARES
FULL-TIME, FIRST-TIME ENROLLMENT BY SECTOR AND TYPE 1970, 1972, 1974-83

TYPE	1970	1972	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
State University of New York												
University Center	4.4	4.0	4.6	5.2	5.3	5.2	5.7	5.5	5.7	5.2	5.4	5.2
University College	7.7	7.8	9.0	8.7	8.0	8.1	8.3	8.6	8.4	8.1	8.2	7.6
Health Sciences Center	0.1	0.1	0.1	0.1					0.1	0.1	0.1	0.1
Specialized College	0.5	0.4	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Statutory College	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Agricultural and Technical	6.8	7.6	7.2	7.2	6.7	6.6	7.0	6.5	6.8	6.4	6.4	6.3
State-Operated Total	(20.2)	(20.6)	(22.6)	(22.1)	(21.0)	(20.7)	(21.9)	(21.5)	(21.7)	(20.6)	(20.9)	(20.0)
Community College	21.4	23.8	22.5	23.5	23.8	23.1	22.5	22.8	22.9	23.6	22.6	22.6
Total	(41.6)	(44.4)	(44.4)	(45.6)	(44.8)	(43.9)	(44.4)	(44.3)	(44.6)	(44.2)	(43.5)	(42.7)
City University of New York												
Senior College	18.7	16.9	14.7	13.2	8.6	10.7	10.6	10.2	9.7	9.6	9.8	9.3
Community College	6.9	6.9	7.6	6.3	7.8	8.2	7.6	7.6	6.7	6.7	6.8	7.2
	(25.6)	(23.8)	(22.2)	(19.5)	(16.4)	(18.8)	(18.2)	(17.8)	(16.4)	(16.3)	(16.6)	(16.5)
Independent												
Multiversity	5.7	5.3	5.6	4.9	5.5	5.1	5.4	5.5	5.6	5.7	5.4	6.0
University	5.6	5.6	4.5	4.7	5.5	5.0	5.2	5.2	5.7	5.7	5.6	5.7
College Complex	9.4	9.7	8.7	9.1	9.7	9.4	9.4	9.6	9.3	9.3	9.4	9.2
College	5.2	5.2	4.4	5.0	6.2	5.9	5.9	6.1	6.6	6.4	6.1	6.3
Specialized College	0.5	0.4	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.5	0.6	0.6
Engineering and Technical	4.1	3.6	4.6	4.7	4.2	4.1	3.9	3.9	4.0	3.9	3.9	4.0
Seminary	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*	0.1
Health Sciences Center	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	*	0.1
Nursing Schools	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2-Year Schools	2.1	1.7	2.1	2.1	2.4	2.2	2.2	2.0	2.2	2.1	2.2	2.3
	(32.8)	(31.8)	(30.5)	(30.9)	(34.2)	(32.2)	(32.7)	(32.8)	(33.9)	(33.8)	(33.5)	(34.4)
Proprietary	0.0	0.0	2.7	4.1	4.6	5.1	4.8	5.1	5.1	5.7	6.3	6.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Less than .05 percent.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 78

NEW YORK STATE FULL-TIME, FIRST-TIME ENROLLMENT BY SECTOR AND TYPE 1970, 1972, 1974-83

TYPE	1970	1972	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
State University of New York												
University Center	6,194	5,607	7,068	8,176	8,036	8,071	8,975	8,834	9,276	8,656	8,408	8,241
University College	10,693	10,986	13,681	13,678	12,125	12,526	12,997	13,873	13,611	13,350	12,869	12,106
Health Sciences Center	99	83	83	76	22	34	34	38	96	140	130	80
Specialized College	631	557	618	575	452	347	323	195	181	205	192	180
Statutory College	1,163	1,041	1,026	1,063	1,059	1,094	1,116	1,129	1,138	1,115	1,124	1,141
Agricultural and Technical	9,468	10,665	11,061	11,289	10,197	10,226	10,953	10,474	11,029	10,524	10,026	9,982
State-Operated Total	(28,248)	(28,939)	(34,537)	(34,857)	(31,891)	(32,298)	(34,398)	(34,543)	(35,351)	(33,990)	(32,749)	(31,730)
Community College	29,860	33,441	34,355	37,041	36,071	35,991	35,424	36,634	37,200	38,908	35,496	35,853
Total	58,108	62,380	67,892	71,898	67,962	68,289	69,822	71,177	72,551	72,898	68,245	67,583
City University of New York												
Senior College	26,157	23,776	22,394	20,785	13,098	16,579	16,718	16,397	15,761	15,884	15,390	14,787
Community College	9,653	9,618	11,557	9,888	11,755	12,599	11,861	12,186	10,922	10,985	10,680	11,339
Total	35,810	33,394	33,951	30,673	24,853	29,278	28,579	28,583	26,683	26,829	26,070	26,126
Independent												
Multiversity	7,941	7,445	8,616	7,698	8,371	7,903	8,453	8,768	9,093	9,456	8,536	9,430
University	7,790	7,877	6,872	7,337	8,291	7,779	8,202	8,385	9,272	9,482	8,819	9,096
College Complex	13,066	13,655	13,220	14,336	14,667	14,692	14,824	15,415	15,174	15,298	14,758	14,552
College	7,306	7,304	6,761	7,882	9,426	9,107	9,203	9,748	10,743	10,511	9,581	10,023
Specialized College	708	519	558	477	654	510	547	530	588	805	930	880
Engineering and Technical	5,693	4,996	6,963	7,440	6,388	6,298	6,090	6,240	6,450	6,485	6,181	6,356
Seminary	306	200	145	141	148	102	72	87	78	84	77	92
Health Sciences Center	208	203	157	167	242	259	208	113	98	105	78	101
Nursing Schools	0	0	0	0	115	85	202	163	167	168	147	142
2-Year Schools	2,873	2,420	3,274	3,275	3,668	3,361	3,527	3,214	3,543	3,405	3,373	3,761
Total	45,891	44,619	46,566	48,753	51,970	50,096	51,328	52,663	55,206	55,799	52,480	54,433
Proprietary	0	0	4,374	6,400	6,977	8,004	7,462	8,221	8,376	9,430	9,926	10,183
TOTAL	139,809	140,393	152,783	157,724	151,762	155,667	157,191	160,644	162,816	164,956	156,721	158,325

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Appendix A

MINORITY ENROLLMENT AND PARTICIPATION IN HIGHER EDUCATION IN NEW YORK STATE

An Issue Paper

This paper summarizes an extensive set of data on minority enrollments and participation in higher education in New York State. It has been prepared to assist the Regents and others concerned about minority access to understand the recent historical enrollment and participation patterns of different racial/ethnic groups. The information provides a basis for monitoring in the future and reveals issues that need attention at the present time.

As with any study of this type, the results and conclusions are no better than the data used in the analyses. The data on enrollments and degrees awarded were obtained from the degree-granting institutions based on self-designations by their respective students. To the extent that the students accurately identify their racial/ethnic origins, the data in this report are correct. It should be noted, however, that for most institutions not all students respond. This results in an unknown margin of error and bias in the figures. Staff who have worked with these data over the years have come to feel that accuracy and reliability are higher now than previously, particularly for years since 1978. Nevertheless, some caution should be used in interpreting the results and in acting on the figures provided in this paper.

This summary provides only selected tabulations of the data on racial/ethnic enrollments that are available. Additional tables are available on request. Interested individuals should contact the Bureau of Postsecondary Research, Information Systems, and Institutional Aid at (518) 474-5091.

For the past two decades there has been general agreement among educators, the general public, and elected officials that no individual with the requisite academic skills should be denied a college education. During the 1960's and 1970's, this philosophy was an important element in the transformation of our higher education system from a selective to a mass education model. It resulted in an unprecedented expansion of enrollments, campuses, and programs across the entire country.

During those two decades the participation of minority groups that formerly had been underrepresented in college enrollments — particularly blacks and Hispanics — grew significantly. This encouraging news has been tempered, however, by a number of recent national studies which have reported that the significant improvements in minority enrollments and participation observed in the 1960's and early 1970's have given way to relative stability since 1975. There is also evidence that the college completion rates of minorities have not matched their initial entry rates.

This summary examines the corresponding situation in New York State. Taking advantage of data resources not available at the national level, it presents a variety of statistics on minority enrollments and participation in higher education and provides insights about progress that has been made and problems that still remain. Each topic is supported by the most complete and accurate information obtainable from the variety of data sources available in the State. The first section on aggregate enrollments is followed by sections on undergraduate participation, undergraduate degrees and completion, graduate level participation and completion, and institutional roles in serving minorities.

Enrollments of Racial/Ethnic Minorities in New York State

Minorities are steadily becoming a larger part of the State's population (Table 1). While the change is taking place across the State, it is most noticeable in New York City, where over 70 percent of the minorities were located in 1981. These trends are directly reflected in college enrollments (Table 2). Minority enrollments in colleges and universities in New York State grew significantly between 1970 and 1982, particularly among full-time undergraduates. Only full-time minority enrollment in graduate programs showed a decline during this period; however, this decline was experienced by all racial/ethnic groups with the exception of Hispanics. Some of the specific trends are highlighted below:

- Minority students comprised 19.5 percent of all degree credit enrollments in New York State in 1982 compared to 14 percent in 1972. In 1980, approximately 30 percent of the New York State population between ages 18 and 59 were minorities. In 1982, there were 748,676 whites, 104,653 blacks, 56,606 Hispanics, 26,504 Asians, and 4,699 native Americans enrolled in degree credit courses.

- Between 1972 and 1982 enrollment of whites at all levels of higher education increased by about three percent, while black enrollment rose by 38 percent and the enrollment of native Americans, Hispanics, and Asians grew by 88 percent, 100 percent, and 137 percent, respectively. Much of this growth is attributable to population increases in college-age categories. Between 1970 and 1980, minorities in the 20 to 24 age group increased by over 81 percent. More than half of this increase appears to be due to migration into the State of blacks, Hispanics, and Asians.
- The numbers of minorities (blacks, native Americans, Asians, and Hispanics) enrolled as full-time undergraduates in New York State almost tripled between 1970 and 1982. The number of white full-time undergraduates increased by only 6 percent over the same period. Almost 70 percent of the increase in minority full-time undergraduates took place between 1970 and 1976, with the remaining 30 percent after 1976. This leveling off, which is consistent with national trends, appears even more dramatic when one considers that the percentage increase in minority enrollment was 135 percent between 1970 and 1976, but only 26 percent between 1976 and 1982.

Participation Rates of Racial/Ethnic Minorities

Although the numbers of minorities enrolled in colleges in New York State increased significantly over the past decade, the changes in participation rates have been much smaller (Table 3). This is because the numbers of minorities in the population and in high school have also increased markedly. Thus, the numerical gains in college enrollments for minorities are due more to increases in the numbers of potential students than to increases in the rates at which members of these groups move on to postsecondary education.

- The college participation rates of 12th graders in New York State have been relatively close for whites, blacks, and Hispanics in recent years (62 percent, 65 percent, and 72 percent, respectively). The rate for Hispanics increased from 52 percent to 72 percent between 1974 and 1982. The estimated participation rates for Asians and native Americans are much higher than for the other three groups. At least some of the differences can be attributed to immigration, adult participation, and misreporting of race-ethnicity by students.
- When participation rates are calculated with respect to ninth graders four years earlier, a very different picture emerges. The rates for blacks (30 percent) and Hispanics (28 percent) are much lower than the rate for whites (51 percent), reflecting their much higher high school dropout rates. These dropout rates, which increased significantly for all racial/ethnic groups between 1972 and 1981, are a major cause for concern. The high school dropout rate increased more for minority groups than for whites.
- College entry rates of 12th graders fluctuated some but showed no significant trends after 1974 for any of the race/ethnic groups. However, when the college entry rates are adjusted for migration of the respective race/ethnic groups into and out of the State, one can hypothesize that college participation of minorities declined slightly, while that of whites increased slightly.
- Based on a survey of high school seniors in the spring of 1981, plans to attend college increase substantially with increases in high school grades and family income for all race/ethnic groups. The survey also revealed a small dip in the participation plans of the middle income groups relative to high and low income groups. Individuals with similar background characteristics reported similar college plans, irrespective of racial/ethnic background.

Undergraduate Degrees and Completion Rates

Blacks and Hispanics who begin college as full-time students are less likely than whites to obtain an undergraduate degree (Table 4). The differences in figures may be attributable in part to larger proportions of blacks and Hispanics choosing to take longer than the traditional two- or four-year schedules, or to higher dropout rates, or both. Comparable figures for Asians and native Americans are not available.

- Of those entering college in recent years, over 90 percent of whites are estimated to earn an undergraduate degree eventually. The same calculations suggest that between 55 percent and 65 percent of the blacks and Hispanics earn an undergraduate degree.
- Of the blacks, Hispanics, and native Americans receiving undergraduate degrees in 1980, approximately 58 percent earned baccalaureate degrees (with the other 42 percent receiving associate degrees). Corresponding percentages for whites and Asians were 64 percent and 78 percent, respectively (Table 4). These percentages were up only slightly from 1978 levels.

Graduate Level Participation and Completion

The proportion of students enrolled in graduate and first-professional degree programs who were of minority background (12 percent) was smaller than the comparable proportions of either undergraduates (22 percent) or 18-year-olds (30 percent) in 1982. However, when one relates graduate and first-professional enrollments to earlier baccalaureate degree recipients, the differences are much smaller.

- Of those whites obtaining baccalaureate degrees, just under half are estimated to go on to obtain graduate degrees. About two-thirds of the Asians and nearly 40 percent of the blacks and Hispanics do the same.
- There are significant differences across the race/ethnic groups in the proportions of degrees awarded in engineering and the sciences (Table 5). In 1980-81, Asians were far more likely to enroll in these fields at the baccalaureate, master's, and doctoral levels. Blacks and Hispanics were less likely than whites to enroll in engineering or science at the baccalaureate level (8.8 percent and 13.2 percent versus 15.5 percent, respectively).
- At the master's level, more students were enrolled in education than in any other field in 1980, with business in second place (Table 5). A much higher proportion of blacks and Hispanics in master's programs were in education (38 percent of each group) than the other race/ethnic groups (28 percent, 19 percent, and 12 percent for whites, native Americans, and Asians, respectively).
- For both doctoral and first-professional degrees, the proportion of minorities among degree recipients was very small. Minorities received 12 percent of the doctoral degrees and seven percent of the first-professional degrees in 1980, with the others awarded to whites. Blacks received five percent; Asians, 4.9 percent; Hispanics, 2.1 percent; and native Americans, 0.2 percent of the doctoral degrees in 1980; and blacks received 3.2 percent; Hispanics, 2.2 percent; Asians, 1.4 percent; and native Americans, 0.1 percent of the first-professional degrees.
- The vast majority of first-professional degrees were awarded in law and medicine. Medicine was clearly at the top of the list for Asians (51 percent of the first-professional degrees awarded to Asians, compared to 33 percent for Hispanics, 30 percent for blacks, 27 percent for whites, and 20 percent for native Americans). Law was at the top of the list for all other groups, accounting for 80 percent of first-professional degrees for native Americans, 63 percent for blacks, 55 percent for Hispanics, 55 percent for whites, but only 29 percent for Asians. Dentistry was also popular among Asians, with 12.6 percent of their first-professional degrees. A shift in black enrollments from medicine toward law has occurred in recent years. Of blacks receiving first-professional degrees, the percentage receiving degrees in medicine dropped from 39 percent to 30 percent between 1976 and 1980, while the percentage receiving degrees in law increased from 50 percent to 63 percent.

Institutional Roles in Serving Minorities

The enrollment of students at specific kinds of institutions may be expected to be highly related to population distributions in the State. Comparison of groups of institutions should take account of population differences in the areas served by each group of institutions. For these analyses, institutions were classified as statewide draw, State minus New York City draw, or local Regents region draw, according to the proportion of their enrollments from each draw area.

The following tables progress from fairly general information to tables that try to account for special influences. Table 6 displays regional population shares (1981-82 12th grade students) next to 1982-83 regional shares of full-time, first-time undergraduates for each race/ethnic group. Enrollment shares are provided separately for two-year and four-year institutions to help control for the influence of their differing missions and the differing tendency of each race/ethnic group to attend two-year and four-year institutions. Over two-thirds of the black, Hispanic, and Asian high school graduates in the spring of 1982 were in New York City; only about 10 percent were north of the Mid-Hudson Regents region. In contrast, only 16 percent of the white high school graduates were in New York City; just under half of the whites were north of the Mid-Hudson region.

In general, there is a strong correspondence between the enrollment and population distributions. The Central, Long Island, and New York City regions show the largest enrollment variations from population distributions. The Central region enrollment share is much higher than its population for all groups except for native Americans. (The pattern holds for both two- and four-year institutions.) Because the attractiveness of Central region institutions to whites is so great, one effect is the relatively lower white enrollment shares at institutions in the Genesee Valley, Northeast, and Mid-Hudson regions. Mid-Hudson enrollment shares are substantially lower than population shares for several groups and may deserve examination. New York City enrollment shares are somewhat lower than the population shares for the minority groups and substantially lower for whites at two-year institutions (9.2 percent enrollment versus 16.3 percent 12th grade pupils). However, the largest discrepancies occur on Long Island.

Enrollment shares lag behind high school graduate shares for blacks and Hispanics at both two-year and four-year institutions. At four-year institutions, the white enrollment share is 10.3 percent, compared to 23.0 percent of the high school seniors. Some of these differences are likely to be due to differences in population characteristics across the regions and students' resulting tendency to migrate to attend college. However, several of the differences in shares are sufficiently large that the unavailability of various institutional options may be an important factor.

Assessment of the accessibility of individual institutions for minorities is very difficult because of differences among the missions of institutions and influences on student choices that are unrelated to access or opportunity. When examining institutional enrollments, regional totals often may be observed to be quite small for each of the minority groups. This frequently results in a tendency for minorities to be enrolled in a relatively few institutions in a region. For example, of 1,378 blacks enrolled as full-time, first-time students in the Western region, 74 percent attended only five of the 22 institutions in the region (Bryant and Stratton Business Institute, Erie Community College, SUNY Buffalo, SUC Buffalo, and Niagara University).

The accessibility of categories of institutions for each race/ethnic group can be assessed more easily. As a starting point, it seems reasonable to expect roughly the same proportion of attendance in each region for primarily local draw institutions such as community colleges, independent two-year institutions, and proprietary institutions. Tables 7 and 8 provide the enrollment numbers and the equivalent percent of regional high school seniors enrolled in institutions classified as local draw according to the origins of their students (see footnote to Tables 7 and 8 for definitions).

Full-time, first-time enrollments at independent two-year and proprietary institutions are not evenly distributed across the State. Forty percent of these enrollments is in New York City, 33 percent in the Western region, and the remaining 23 percent is scattered throughout the rest of the State. Community college enrollments are much more in correspondence with population. When examined as a proportion of local high school graduates, the participation rates are generally close across the regions (Table 8). For example, black community college enrollment in the Western region is equivalent to 21 percent of the preceding spring's black high school seniors in the Western region; this proportion is also 21 percent for New York City. For blacks, the only large variations in community college enrollment rates occur in the Northern and Long Island regions. The Northern region shows enrollments equivalent to 300 percent of high school seniors. This is caused simply by small numbers (three freshmen divided by one high school senior equals 300 percent). On Long Island the percentage is 11 percent, or about one-half that of the other regions. This appears to be a real difference that holds for Asians and Hispanics on Long Island as well. Other notable community college variations are the small proportions of whites and Asians in New York City colleges (10 percent and 15 percent) and the concentration of native American enrollments in the Northeast, Mid-Hudson, New York City, and Long Island regions.

Two additional categories of institutions that may be compared are State University centers and independent multiversities (Table 9). Both sets of institutions seek to attract highly able students. The comparison is not perfect, since highly selective programs are present in other colleges, particularly some of the smaller independent colleges and some City University senior colleges. However, these two groups of institutions draw their students statewide and the balance existing between them for each race/ethnic group is of interest. In 1982, 264 blacks attended the six independent multiversities as full-time, first-time students, compared to 416 at the four State University centers. The largest difference is for whites, with 3,086 at the multiversities and 6,808 at the State University centers. When defined as a percent of the high school graduate pool, participation at the multiversities ranged from one percent for blacks to 8.7 percent for whites. Participation at the State University centers ranged from 1.4 percent for blacks to 9.6 percent for whites. These differences in rate across race/ethnic groups largely reflect socioeconomic backgrounds. It is not clear whether or not the size of the differences reflects factors other than background characteristics.

Enrollment summaries (Table 10) have also been made for "other" four-year institutions, that is, those which fall neither in the local draw two-year college category nor in the multiversity/university center category. For students attending these institutions, approximately 30 percent of each minority group was enrolled in a State draw institution while 40 percent of the whites were in the same category of institution. However, since much higher proportions of whites than minorities enrolled in State minus New York City draw institutions, proportionally fewer white students enrolled in local draw institutions (24 percent) than did the minority groups (59 to 67 percent). For State draw institutions, 21 to 31 percent of each race/ethnic group was enrolled in State University and the remainder in independent institutions. For the State minus New York City category, the proportions range from 43 to 55 percent at State University, with the rest in independent institutions. In contrast, City University enrolled 59 to 65 percent of the blacks, Hispanics, and whites at local draw institutions, with the rest at independent institutions. Over 80 percent of the Asians and native Americans in local draw institutions attend City University. While all but a very few of the community colleges are local draw institutions (at least 75 percent of enrollments from the home region), none of the four-year State University colleges fall in this category. All of the City University institutions are local draw. Less than 25 percent of the "other" four-year independent enrollment is in local draw institutions. For the "other" four-year colleges, over two-thirds of the blacks, Hispanics, and Asians at State University are in statewide draw colleges, compared to 37 percent of the whites. In the independent sector there are higher proportions of whites and Asians in statewide colleges than blacks, Hispanics, and native Americans.

Table 11 groups the enrollments at "other" four-year institutions into public and independent totals. It is assumed that each of these groups, as groups, serves the entire State. The public and independent totals are reasonably close for each race/ethnic group. For example, for blacks the split is 3,484 public and 3,581 independent. The largest differences are for whites, 18,469 public and 23,247 independent, and Asians, 938 public and 659 independent. When taken as a percent of high school graduates, essentially the same proportion of blacks, Hispanics, and whites attend the independent sector institutions (12.5 percent). Nearly 16 percent of the Asians and 21 percent of the native Americans attend these institutions in the independent sector. Approximately the same proportion of blacks attend the public sector as the independent sector, but a higher proportion of Hispanics, Asians, and native Americans attend the public "other" four-year institutions than the similar independent institutions. Only the whites constituted full-time, first-time public sector enrollments that represented a smaller proportion of high school graduates than did the independent sector enrollments (9.9 percent compared to 12.4 percent). This contrasts with the larger number of whites at the State University centers than at the independent multiversities.

Within the public sector, the enrollment splits between State University and City University may be compared to the population distribution in New York City and the rest of the State. In general, for "other" four-year institutions the enrollment distribution is similar to the high school senior distribution for all race/ethnic groups, except native Americans (Table 12). Although the distributions are similar, City University enrollment/shares are higher than the New York City high school senior shares for all groups, generally by four to eight percentage points. This difference may reflect the inclusion of all City University senior colleges in the "other" four-year category and the exclusion of the State University centers from the "other" four-year category.

To summarize, the racial/ethnic enrollments for major categories of institutions in the State correspond roughly to racial/ethnic population distributions by Regents region. A few discrepancies may warrant further examination, however. Differences in overall participation rates by race/ethnicity appear to be larger than differences in the distributions of enrolled students. Institutional enrollment of minority groups is difficult to assess because of the tendency of individuals to congregate in institutions where they find other students with whom they share common concerns and interests so as to obtain a critical social mass of like enrolled students.

Future Prospects

It is not possible to develop population projections by race/ethnic category without a major analysis effort; many of the necessary data are not readily available. It is possible, however, to develop projections of high school graduates in the State by race/ethnic category based on current elementary-secondary enrollments in the schools across the State. Since this continues to be the largest source of new college students, this is of particular interest to planners.

Projections for 1992-93 are provided in Table 13 for each of the eight Regents regions and the State as a whole. The figures show considerable variation across both the State and the race-ethnic categories, although the overall statewide decline is essentially the same as in projections of high school graduates prepared in 1983 by the State Education Department. Whites show the largest declines and the least variation; only native Americans in the Genesee Valley and New York City regions show larger percentage declines. Asians show major increases over the decade in all regions of the State. This is related to their immigration into both the City and the State in recent years. It is interesting to note the significant differences between projections for black and Hispanic high school graduates. Apparently, the higher birth rates and immigration of Hispanics will be sufficient to offset most of the declines related to the passing of the baby boom.

Special Notes About the Data

The data on racial/ethnic enrollments and degrees conferred used in this report are taken from responses to Federal questionnaires (Fall Enrollment and Compliance Report — ED 2300-2.3A) administered in New York State by the State Education Department. The five racial/ethnic categories are those used in these Federal surveys. The Office of Civil Rights has never included an "Unknown" category, insisting that institutions assign every student to a proper category and providing no official guidance in cases where this is not possible. Generally, the institutions allocate "unknowns" to the other categories in their respective proportions. Because the data for most institutions are based on incomplete and voluntary responses by students, this process is subject to some unknown error.

Another observation about these data is important: migration into and out of the State "contaminates" all of the data for New York State. Immigration of Asians is particularly noticeable in elementary/secondary enrollment in successive years. Since explicit estimates of migration patterns are not available, it is not possible to standardize the figures, either over time or across racial/ethnic categories, to permit precise numerical comparisons.

Table 1

NEW YORK STATE
POPULATION TRENDS BY RACE/ETHNICITY

Race/Ethnic Category	Age in 1970 Age in 1980	14-19 24-29	20-24 30-34	25-29 35-39	30-34 40-44	35-39 45-49
White						
1970		1,657,430	1,170,230	1,027,339	871,721	873,379
1980		1,343,194	1,054,915	855,006	721,217	731,673
Percent change between 1970 & 1980		-19.0%	-9.9	-16.8	-17.3	-16.2
Nonwhites						
1970		261,998	185,162	186,518	171,842	155,185
1980		382,666	296,924	251,901	215,098	179,838
Percent change between 1970 & 1980		+46.1	+60.4	+35.1	+25.2	+15.9

Note: These figures incorporate any deaths or migration that took place between 1970 and 1980.

Source: NYSED, Bureau of Postsecondary Research, Information Systems and Institutional Aid, 1983.
U.S. Census Bureau data.

Table 2

NEW YORK STATE
ENROLLMENT BY RACIAL/ETHNIC CATEGORY AND LEVEL OF STUDY
Fall 1970, 1972, 1974, 1976, 1978, 1980, 1982

Level of Study	Non-Resident Alien	Black, Non-Hispanic	American Indian or Alaskan Native	Asian or Pacific Islander	Hispanic	White, Non-Hispanic	All Other** Students	Total
Full-Time Undergraduate								
1970	--	25,896	1,170	4,728	9,704	--	397,997	439,495
1972	--	42,314	1,278	5,915	17,177	--	406,515	473,199
1974	--	50,392	1,294	6,778	21,360	--	425,970	505,794
1976	8,719	57,126	2,742	9,396	28,198	431,966	--	538,147
1978	8,756	62,076	2,682	11,041	30,988	419,330	--	534,873
1980	11,258	67,604	2,651	12,278	35,714	430,208	--	560,218
1982	12,870	66,519	2,745	15,836	37,226	421,453	10,864	567,513
Part-Time Undergraduate								
1970	--	--	--	--	--	--	--	--
1972	--	25,932	821	1,837	8,735	--	158,092	195,417
1974	--	--	--	--	--	--	--	--
1976	1,699	31,165	1,369	3,655	11,344	178,899	--	228,131
1978	1,545	27,248	1,220	3,803	10,791	183,452	--	228,059
1980	1,975	29,090	1,454	4,813	13,262	189,850	--	240,444
1982	2,331	30,125	1,502	6,107	14,578	195,694	4,679	255,016
Full-Time Graduate								
1970	--	2,031*	149*	988*	673*	--	51,341*	55,182*
1972	--	2,280	120	1,313	650	--	38,407	42,770
1974	--	--	--	--	--	--	--	--
1976	5,030	2,312	149	1,077	1,153	35,847	--	45,568
1978	5,530	2,369	146	1,102	1,183	36,152	--	46,482
1980	6,703	2,670	140	1,250	1,470	34,950	--	47,183
1982	6,675	1,762	95	1,171	1,379	33,737	886	45,705

*First-Professional included in Graduate Totals.
**Includes Unknown in 1982.

Table 2 (Continued)

NEW YORK STATE
ENROLLMENT BY RACIAL/ETHNIC CATEGORY AND LEVEL OF STUDY
FAll 1970, 1972, 1974, 1976, 1978, 1980, 1982

Level of Study	Non-Resident Alien	Black, Non-Hispanic	American Indian or American Native	Asian or Pacific Islander	Hispanic	White, Non-Hispanic	All Other Students	Total
Part-Time Graduate								
1970	--	--	--	--	--	--	--	--
1972	--	4,856	260	1,943	1,547	--	104,331	112,937
1974	--	--	--	--	--	--	--	--
1976	2,905	6,247	291	2,116	2,788	91,340	--	105,687
1978	2,558	5,759	347	2,500	2,625	84,251	--	98,040
1980	2,332	5,590	253	2,819	3,696	81,560	--	96,250
1982	3,127	5,360	321	2,776	2,680	76,513	4,550	95,327
Full-Time First-Professional								
1970	--	--*	--*	--*	--*	--	--*	--*
1972	--	601	25	160	160	--	14,705	15,651
1974	--	--	--	--	--	--	--	--
1976	156	781	22	285	314	16,815	--	18,373
1978	156	716	36	294	403	19,164	--	20,769
1980	1,343	674	33	435	484	18,666	--	20,425
1982	123	759	32	574	572	19,113	1,033	22,206
Part-Time First-Professional								
1970	--	--	--	--	--	--	--	--
1972	--	80	--	11	19	--	1,669	1,779
1974	--	--	--	--	--	--	--	--
1976	3	74	1	21	45	1,633	--	1,777
1978	2	75	1	12	38	1,783	--	1,911
1980	--	107	1	19	48	2,031	--	2,206
1982	20	128	4	40	71	2,166	96	2,525

*First-Professional included in Graduate totals.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1983.

Table 3

HIGH SCHOOL RETENTION AND COLLEGE PARTICIPATION OF RACE/ETHNIC GROUPS IN NEW YORK STATE
1970 to 1982

High School Retention

12th Grade Enrollments as a Percentage of 9th Graders Three Years Earlier

Year	Asian	White	Black	Hispanic	Native Americans
1972	--%	85%	59%	53%	--%
1973	114	83	56	49	83
1974	113	83	58	47	98
1975	101	83	50	47	73
1976	108	83	57	51	68
1977	109	83	56	47	71
1978	112	82	56	47	72
1979	116	81	53	42	70
1980	101	81	49	40	57
1981	107	81	47	41	60
1982	93	82	48	43	68

College Participation

New Full-Time College Students as a Percentage of 12th Graders One Year Earlier

Year	Asian	White	Black	Hispanic	Native Americans
1974	--	58	65	52	--
1976	--	55	70	70	--
1978	100	58	58	58	196
1980	86	64	63	68	160
1982	100	62	65	72	188

New Full-Time College Students as a Percentage of 9th Graders Four Years Earlier

Year	Asian	White	Black	Hispanic	Native Americans
1974	--	49	36	25	--
1976	--	45	38	33	--
1978	109	48	32	27	140
1980	100	52	33	29	113
1982	107	57	30	29	112

Note: In- and out-migration of enrollments and the population influence all the ratios shown in this table. For example, high school retention levels of Asians that are greater than 100% are due to the recent high levels of immigration of Asians. Also influencing the figures are unknown numbers of older students entering college for the first time. This is believed to be an important factor in the unusually high college entry rates for native Americans.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1983.

Table 4

COLLEGE RETENTION AND DEGREE ATTAINMENT OF RACE/ETHNIC GROUPS IN NEW YORK STATE 1978 to 1982

	Year	Asian	White	Black	Hispanic	Native Americans
College Retention						
Estimated Proportion of New College Students Persisting to an Undergraduate Degree						
	1978	--	91.0	63.0	58.0	--
	1980	--	94.0	63.0	55.0	--
	1982	--	--	--	--	--
Bachelors Degrees as a Percentage of All Undergraduate Degrees						
	1978	--	63.7	60.6	56.1	--
	1980	81.7	63.4	57.5	58.8	58.6
	1982	--	--	--	--	--
Associate Degrees as a Percentage of All Undergraduate Degrees						
	1978	--	36.3	39.4	43.9	--
	1980	18.3	36.6	42.5	41.2	41.4
	1982	--	--	--	--	--
Graduate Degree Attainment						
Graduate Degrees as a Percentage of Bachelors Degrees Two Years Earlier						
	1978	65.0	47.7	42.3	37.2	53.0
	1980	68.6	49.0	34.4	47.7	31.9
	1982	--	--	--	--	--
Doctoral & First-Professional Degrees as a Percentage of All Graduate Degrees						
	1976	--	21.3	14.0	11.8	--
	1978	17.1	24.7	12.9	17.1	14.2
	1980	21.2	24.4	14.6	15.3	14.9
	1982	--	--	--	--	--

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1983.

Table 5

PROPORTIONS OF ENROLLMENT OF RACE/ETHNIC GROUPS ENROLLED IN SELECTED DISCIPLINE CATEGORIES IN NEW YORK STATE

1980-81

	Black, Non-Hispanic	Native American	Asian/ Pacific Islander	Hispanic	White, Non-Hispanic	Non-Resident Alien	Total Number*
BACHELORS							
1) Arts/Letters/Etc	12.4%	13.5%	12.5%	13.1%	16.3%	16.9%	12,518
2) Business/Computer	19.3	21.0	25.8	18.7	22.0	21.0	17,231
3) Education	8.1	8.2	4.2	6.5	6.7	1.6	5,301
4) Engineering/Science	8.8	11.6	27.3	13.2	15.5	36.4	12,304
5) Health	13.1	13.1	8.1	6.7	7.9	2.7	6,486
6) Social Sci/Psych	22.2	20.6	15.6	24.2	20.6	14.6	16,351
7) Other	16.2	12.0	6.4	17.5	11.1	6.8	9,172
Total Bachelors	100.0	100.0	100.0	100.0	100.0	100.0	79,363
MASTERS							
1) Arts/Letters/Etc	7.4%	11.1%	9.3%	7.0%	10.1%	12.5%	3,071
2) Business/Computer	13.6	25.4	34.9	13.0	22.4	21.2	6,708
3) Education	37.5	19.0	11.7	37.8	27.8	12.7	8,348
4) Engineering/Science	5.8	6.3	19.3	8.6	8.8	26.6	3,132
5) Health	11.0	7.9	9.8	5.3	6.4	2.4	1,973
6) Social Sci/Psych	7.5	7.9	6.1	7.8	7.0	12.5	2,290
7) Other	17.3	22.2	8.9	21.5	17.6	12.1	5,269
Total Masters	100.0	100.0	100.0	100.0	100.0	100.0	30,791
DOCTORAL							
1) Arts/letters/Etc	13.4%	--	3.9%	10.5%	8.8%	6.2%	256
2) Business/Computer	0.7	--	3.9	--	2.3	3.8	73
3) Education	26.1	33.3	10.1	12.3	20.2	12.4	570
4) Engineering/Science	14.9	16.7	56.6	19.3	30.4	52.2	991
5) Health	2.2	33.3	2.3	7.0	3.7	1.2	102
6) Social Sci/Psych	25.4	--	16.3	29.8	22.0	12.4	627
7) Other	17.2	16.7	7.0	21.1	12.6	11.8	378
Total Doctoral	100.0	100.0	100.0	100.0	100.0	100.0	2,997

* Excludes unknowns

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 6

RACIAL ETHNIC ENROLLMENT DISTRIBUTIONS OF FULL-TIME,FIRST-TIME BY REGENTS REGION AND INSTITUTIONAL LEVEL
1982-83

	Race/Ethnicity														
	Black			Native American			Asian			Hispanic			White		
	1981-82	1982-83		1981-82	1982-83		1981-82	1982-83		1981-82	1982-83		1981-82	1982-83	
Regents Region	12th Grade	2-Yr	4-Yr	12th Grade	2-Yr	4-Yr	12th Grade	2-Yr	4-Yr	12th Grade	2-Yr	4-Yr	12th Grade	2-Yr	4-Yr
Western	5.8%	10.2%	6.1%	35.0%	20.1%	10.2%	2.2%	6.1%	6.9%	1.3%	5.1%	2.3%	11.7%	16.4%	13.0%
Genesee Valley	3.9	4.3	2.0	15.0	4.1	4.5	2.6	4.3	2.5	1.4	1.6	1.3	10.0	8.6	8.4
Central	1.4	3.0	4.1	13.3	3.9	5.2	1.9	3.0	7.7	0.4	1.2	3.8	10.1	12.9	17.4
Northern	0.0	0.1	0.0	8.3	2.7	1.0	0.0	0.2	0.3	0.0	0.0	0.0	2.4	3.6	2.9
Northeast	2.4	2.7	3.4	3.4	10.1	2.3	2.1	2.5	4.4	0.7	1.1	2.1	12.0	15.0	10.6
Mid-Hudson	9.1	8.8	12.2	3.4	5.3	15.5	7.9	13.1	2.9	6.3	4.7	9.0	14.5	11.3	9.4
New York City	66.0	62.7	64.6	14.8	33.9	59.1	73.9	61.5	64.7	81.0	79.0	75.4	16.3	9.2	27.9
Long Island	11.4	8.2	7.7	6.8	19.9	2.2	9.4	9.3	10.5	8.9	7.2	6.1	23.0	22.9	10.3
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

NOTE: Tables may not add to 100 percent due to rounding.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 7

NEW YORK STATE
1982 FULL-TIME, FIRST-TIME ENROLLMENT IN TWO-YEAR LOCAL DRAW INSTITUTIONS*
BY
Regents Region
Race/Ethnicity
Type of Institution

		Regents Region							
Race Ethnicity	Type Institution	Western	Genesee Valley	Central	Northern	North-east	Mid-Hudson	New York City	Long Island
Black	Comm. Coll.**	351	245	74	3	179	472	3,967	358
	Indep. 2-Year	83	0	0	0	0	0	177	0
	Proprietary	385	100	79	0	64	32	1,000	38
Native American	Comm. Coll.	44	8	4	2	36	23	139	56
	Indep. 2-Year	5	0	0	7	0	0	0	0
	Proprietary	13	1	2	0	0	0	3	0
Asian	Comm. Coll.	9	40	24	2	24	123	453	45
	Indep. 2-Year	0	0	0	0	0	0	28	0
	Proprietary	10	3	0	0	1	2	110	1
Hispanic	Comm. Coll.	55	67	18	0	47	173	3,215	155
	Indep. 2-Year	3	0	0	0	0	0	100	0
	Proprietary	26	13	4	0	7	8	553	24
White	Comm. Coll.	4,354	3,416	3,382	416	5,144	4,614	3,164	7,946
	Indep. 2-Year	535	0	0	123	174	0	241	0
	Proprietary	1,736	301	379	0	283	155	1,126	419

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 8

NEW YORK STATE
1982 FULL-TIME, FIRST-TIME ENROLLMENT IN TWO-YEAR LOCAL DRAW INSTITUTIONS AS A PERCENT OF 1981-82 HIGH SCHOOL SENIORS*
BY
Regents Region
Race/Ethnicity
Type of Institution

		Regents Region							
Race Ethnicity	Type Institutioni	Western	Genesee Valley	Central	Northern	North-east	Mid-Hudson	New York City	Long Island
Black	Comm. Coll.**	21%	22	19	300	26	18	21	11
	Indep. 2-Year	5	0	0	0	0	0	1	0
	Proprietary	23	9	20	0	9	1	5	1
Native American	Comm. Coll.	31	13	7	6	257	164	228	200
	Indep. 2-Year	4	0	0	21	0	0	0	0
	Proprietary	9	2	4	0	0	0	5	0
Asian	Comm. Coll.	10	36	31	100	28	37	15	11
	Indep. 2-Year	0	0	0	0	0	0	1	0
	Proprietary	11	3	0	0	1	1	4	0
Hispanic	Comm. Coll.	27	33	29	0	41	18	26	12
	Indep. 2-Year	2	0	0	0	0	0	1	0
	Proprietary	13	6	7	0	6	1	5	2
White	Comm. Coll.	20	18	18	9	23	17	10	18
	Indep. 2-Year	2	0	0	3	1	0	1	0
	Proprietary	8	2	2	0	1	1	4	1

See page 174 for footnotes.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

FOOTNOTES (for Tables 7 and 8)

*Local Draw Institutions were defined as those where 75 or more percent of the full-time first-time enrollment were residents of the local region.

**For community colleges, the New York City column is City University enrollments. The other columns are State University enrollments.

Five community colleges drew less than 75 percent of their enrollment from the home region and are not included in these totals. They are:

Fashion Institute of Technology	New York City
Genesee Community College	Genesee Valley
Herkimer Community College	Northeast
North Country Community College	Northeast
Sullivan Community College	Mid-Hudson

Non-local Independent 2-Year Colleges are:

American Academy of Dramatic Arts	New York City
Cazenovia College	Central
Culinary Institute of America	Mid-Hudson
Elizabeth Seton College	Mid-Hudson
Maria Regina College	Central
Paul Smith's College	Genesee Valley

Non-local Degree-Granting Proprietary Institutions are:

Central City Business Institute	Central
Laboratory Institute of Merchandising	New York City
Monroe Business Institute	New York City
School of Visual Arts	New York City

Table 9

NEW YORK STATE
FULL-TIME, FIRST-TIME ENROLLMENT
AS A PERCENT OF HIGH SCHOOL GRADUATES
OF THE SAME RACE/ETHNICITY*
For
Multiversities and State University Centers
1982

	Number at		Percent* of 1981-82 New York High School Seniors of that Race/Ethnicity at	
Race/Ethnicity	Independent Multiversities	SUNY University Centers	Independent Multiversities	SUNY University Centers
Black	264	416	1.0%	1.4%
Hispanic	173	189	1.5	1.3
Native American	13	24	3.4	5.8
Asian	301	403	8.7	9.6
White	3,086	6,808	1.8	3.6

*The denominator for the percentages (high school seniors) was determined by area(s) from which the institutions attracted their students. Percentages were calculated separately for State draw and State-New York City draw institutions and then added to obtain a total for the institutional type.

Table 10

NEW YORK STATE FULL-TIME, FIRST-TIME ENROLLMENT IN FOUR-YEAR INSTITUTIONS OTHER THAN THE STATE UNIVERSITY CENTERS & MULTIVERSITIES BY RACE/ETHNICITY AND REGION OF STUDENT DRAW

Fall 1982

Enrollment	Race/Ethnicity				
	Black	Hispanic	White	Asian	Native American
Type of Institution					
State Draw	2,086	1,107	16,937	947	62
State - NYC Draw	644	169	14,701	114	36
Local Draw	4,335	2,613	10,078	936	141
Total	7,065	3,889	441,716	1,597	239
State Draw Institutions*					
State University	645	229	4,601	115	17
City University****	0	0	0	0	0
Independent	1,441	878	12,336	432	45
Total	2,086	1,107	16,937	547	62
State - NYC Draw**					
State University	287	72	7,692	55	20
City University****	0	0	0	0	0
Independent	357	97	7,009	59	16
Total	644	169	14,701	114	36
Local Draw***					
State University	0	0	0	0	0
City University****	2,552	1,711	6,176	768	114
Independent	1,783	902	3,902	168	27
Total	4,335	2,613	10,078	936	141

*New York State Draw: Institutions with at least 25 percent of their enrollment (FTFS) from outside of the institution's Regents region and at least 10 percent from New York City.

**New York State-New York City Draw: Institutions with at least 25 percent of their enrollment from outside their Regents region but less than 10 percent from New York City.

***Local Draw: Institutions with at least 75 percent of their enrollments from the local Regents region.

****Senior College total less NYC Technical College. All City University senior colleges are in the Local Draw category.

Table 10 (cont.)

Within Category Shares	Black	Hispanic	White	Asian	Native American
Type of Institution					
State Draw	29.5%	28.5	40.6	34.3	25.9
State - NYC Draw	9.1	4.3	35.2	7.1	15.1
Local Draw	61.4	67.2	24.2	58.6	59.0
Total	100.0	100.0	100.0	100.0	100.0
State Draw Institutions*					
State University	30.9	20.7	27.2	21.0	27.4
City University****	0	0	0	0	0
Independent	69.1	79.3	72.8	79.0	72.6
Total	100.0	100.0	100.0	100.0	100.0
State - NYC Draw**					
State University	44.6	42.6	52.3	48.2	55.5
City University****	0	0	0	0	0
Independent	55.4	57.4	47.7	51.8	44.5
Total	100.0	100.0	100.0	100.0	100.0
Local Draw***					
State University	0	0	0	0	0
City University****	58.9	65.5	61.3	82.1	80.9
Independent	41.1	34.5	38.7	17.9	19.1
Total	100.0	100.0	100.0	100.0	100.0

*New York State Draw: Institutions with at least 25 percent of their enrollment (FTFS) from outside of the institution's Regents region and at least 10 percent from New York City.

**New York State-New York City Draw: Institutions with at least 25 percent of their enrollment from outside their Regents region but less than 10 percent from New York City.

***Local Draw: Institutions with at least 75 percent of their enrollment from the local Regents region.

****Senior College total less NYC Technical College. All City University senior colleges are in the Local Draw category.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 11

NEW YORK STATE
FULL-TIME, FIRST-TIME ENROLLMENT IN FOUR-YEAR INSTITUTIONS OTHER THAN THE STATE UNIVERSITY CENTERS & MULTIVERSITIES BY RACE/ETHNICITY AND SECTOR
Fall 1982

	Enrollment						Percent of NYS High School Seniors**	
Race/Ethnicity	State Univ.		City Univ.*		Public	Independent	Public	Independent
Black	932	+	2,552	=	3,484	3,581	12.1%	12.5%
Hispanic	301	+	1,711	=	2,012	1,877	15.0	12.5
White	12,293	+	6,176	=	18,469	23,247	9.9	12.4
Asian	170	+	768	=	938	659	22.4	15.7
Native American	37	+	114	=	151	88	36.6	21.4

*Senior College total less New York City Technical College.
**High school seniors in 1981-82.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 12

NEW YORK STATE DISTRIBUTION OF HIGH SCHOOL SENIORS AND FULL-TIME, FIRST-TIME ENROLLMENT IN PUBLIC FOUR-YEAR INSTITUTIONS OTHER THAN THE STATE UNIVERSITY CENTERS

	New York City		Upstate & Long Island		New York
Race/Ethnicity	City University*		State University		State
Black					
High School Seniors	66.2%	+	33.8	=	100.0%
Full-Time, First-Time	73.2	+	26.8	=	100.0%
Hispanic					
High School Seniors	81.0%	+	19.0	=	100.0%
Full-Time, First-Time	85.0	+	15.0	=	100.0%
White					
High School Seniors	27.5%	+	72.5	=	100.0%
Full-Time, First-Time	33.4	+	66.6	=	100.0%
Asian					
High School Seniors	73.9%	+	26.1	=	100.0%
Full-Time, First-Time	81.9	+	18.1	=	100.0%
Native American					
High School Seniors	14.8%	+	85.2	=	100.0%
Full-Time, First-Time	75.5	+	24.5	=	100.0%

*Senior Colleges excluding New York City Technical College.

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Table 13

NEW YORK STATE
PROJECTED PERCENT CHANGE IN HIGH SCHOOL GRADUATES FROM 1982-83

		Race/Ethnicity					
Regents Region	Year	Native American	Black	Asian	Hispanic	White	Total
Western	1992-93	-22.4	-25.8	+191.6	+40.6	-36.4	-34.0
Genessee Valley	1992-93	-53.4	+2.1	+586.6	+61.5	-34.8	-27.9
Central	1992-93	-23.1	+8.7	+211.4	+71.9	-31.5	-29.2
Northern	1992-93	-29.7	+71.5	+122.1	+54.1	-31.3	-30.7
Northeast	1992-93	+85.7	-5.7	+212.9	+5.4	-32.4	-30.1
Mid-Hudson	1992-93	+185.2	-23.9	+143.0	+9.5	-39.3	-33.7
New York City	1992-93	-83.3	-17.9	+149.8	-4.1	-37.8	-16.7
Long Island	1992-93	+209.9	-15.2	+156.6	+7.6	-38.2	-33.2
New York State	1983-84	-14.4	-0.4	+16.1	+3.0	-5.7	-4.1
	1984-85	-2.8	-4.6	+30.0	-1.0	-10.7	-8.5
	1985-86	+3.6	-9.9	+42.4	-4.4	-14.1	-11.8
	1986-87	-4.6	-11.8	+61.8	-6.5	-14.1	-11.8
	1987-88	+12.6	-2.8	+88.3	+6.0	-14.0	-9.3
	1988-89	+1.0	-12.4	+109.0	-1.8	-20.4	-15.8
	1989-90	-19.5	-17.9	+123.9	-3.0	-28.9	-23.0
	1990-91	-6.8	-21.7	+140.5	-3.9	-33.7	-27.0
	1991-92	-16.1	-20.2	+158.9	-4.6	-34.8	-27.3
	1992-93	+8.6	-17.1	+165.9	-0.2	-36.2	-27.6
Projection Numbers							
	1982-83	382	26,771	4,028	14,658	171,937	217,776
	1992-93	415	22,186	10,711	14,627	109,706	157,645

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1983.

Appendix B

NET COST OF STUDENT ATTENDANCE IN NEW YORK— THE STUDENT SUPPORT SOURCES MODEL

An Issue Paper

In preparing the Bulletin of the Statewide Plan for the Development of Postsecondary Education 1984, the Regents and the advisory groups with which they consulted agreed that:

- The State Education Department will collect and make available annually information on postsecondary enrollment shares by sector and institutional type, on net cost of attendance, on expenditure per student, on programmatic offerings, and other information related to student choice.
- Net cost of student attendance information will take account of all student costs including tuition, room, and board, and of all available student grants or waivers from State, Federal, and institutional sources. Net cost of attendance will be computed separately for high-, medium- and low-income dependent, full-time undergraduates, and for residential and commuting students in each income category. For each student group, net cost of attendance will be computed separately for community colleges and senior colleges in State University and City University and for high-tuition and low-tuition institutions in the independent and proprietary sectors.

It is with the latter charge that this paper deals. It describes the Student Support Sources (SSS) Model, which simulates variations in cost to the student of attendance at various types of institutions. It is based upon estimates of both student expense budgets and student aid available to meet these costs. The simulation is hypothetical and does not reflect the actual award of student aid to any given category of students. Rather, through the collection and manipulation of broad general information on student costs and financial aid distribution, it simulates examples of the application of student aid to offset the expenses related to college attendance. This simulation is meant neither to depict the actual functioning of the financial aid system nor to evaluate the adequacy of this system. It is intended to present a frame of reference in which observations on the possible effect of the student aid system on a diverse system of postsecondary institutions may be made. By simulating costs and aid for broad categories of institutions and students, the model provides insight into one of the factors which may affect college choice. An indication, using these generalized hypothetical data, that there is an increasing differential between cost and available aid for certain income groups in any given institutional category, should then result in a more extensive inquiry into the cause for such growing disparity and its potential effect. The output of the Student Support Sources Model is not conclusive in itself, but rather it is an important initial component in an analysis of a variety of factors which may influence the use of resources.

SSS Model is:

1) a simulation of the financial aid allocation process, in the form of a micro-computer program;
2) capable, given required assumptions and information, of estimating the types and amounts of financial aid that hypothetical students might receive:
3) potentially useful for showing relative changes in the allocation of aid over time, or as the result of modified procedures for financial aid administration.

SSS Model is not:

1) a device for packaging financial aid for students;
2) a source of specific financial aid data for any sector or institution of student;
3) A potential predictor of the precise effects of statutory or other modifications of procedures for financial aid administration.

As are all simulations, SSSM is an approximate representation of reality in highly simplified form. The Student Support Sources Model is still in the process of development. Decisions related to the manipulation and display of the data are under discussion with an intersector technical advisory committee whose contribution to date has significantly altered and improved the simulation. The usefulness of the model will be greatly enhanced when a longitudinal data base has been established so that trends in the net cost of student attendance can be determined. Development of this multi-year data base and continued effort on the improvement and expansion of the simulation with the aid of the advisory group will be the primary focus of our efforts on the SSS Model for the foreseeable future.

Student Support Sources Model

The program is written in BASIC. At present it operates off of diskettes on a TRS 80 (III) microcomputer. It is some 800 lines in length, with numerous subroutines. It represents a high level of creativity in design and programming; this, addressed to so arcane a topic as net cost of attendance, means that a certain complexity is probably inevitable.

Given specific assumptions such as income level, family size and dwelling status, and input information including tuition and fees level and other costs of college attendance, the SSS Model will run cost and support sources profiles of hypothetical students in a wide range of possible economic circumstances and academic settings. Central to the program is a series of profile data tables which store the many types of information which the model's subroutines use to perform calculations and report results. Results of each run are printed clearly in tabular form with plain-English headings. One such printout (which happens to deal with the independent sector) is included for the sake of an example as Figure A.

Figure A

```
                          Sector       : Independent
                          Dwell. Status: Resident
                          Eman. Status : Dependent

INCOME  TOTAL     FAMILY     PELL     TAP   CAMPUS     GSL    INST.     LAST        NET COST   TOTAL AID
CATEG.  EXPENSE   CONTRIB    AWARD   AWARD   BASED    LOANS   BASED  MET NEED  INCL. LOANS   EXCL. LNS
-------------------------------------------------------------------------------------------------------
  1      7790     700/  9  1496/19 1719/22 1017/13 2375/30  483/ 6     0/ 0   3075/ 39/ 34    4715
  2      7790     740/  9  1096/14 1394/18 1017/13 2375/30 1014/13   154/ 2   3269/ 42/ 23    4521
  3      7790    1021/ 23   346/ 4  471/ 6 1017/13 2375/30  725/ 9  1035/13   5231/ 67/ 23    2559
  4      7790    4464/ 57     0/ 0    0/ 0 1017/13 2309/30    0/ 0     0/ 0   6773/ 87/ 19    1017
```

The SSS Model follows the progression: total expense less family (and student) contribution, less Pell award, less Tuition Assistance Program award, less Campus-Based aid, less Guaranteed Student Loan, less institutional-based aid. If, in the course of this progression, total aid awarded equals total expense, then no more aid is awarded and the last aid to be awarded is appropriately truncated. The model then calculates last-met need, which is the difference (if any) between total expense and the sum of family contribution plus all aid. Next, net cost, or family-student cost, is computed; this is the "out-of-pocket" cost of college both immediate and deferred, i.e., it includes any Guaranteed Student Loan awarded. It also includes last-met need, if any, an assumption being that this gap is (somehow) met by the student or his family. Finally, total aid is calculated, and this does *not* include GSL. Each of the above entities is reported both as a number and a percent (of total expense). Net cost is followed by two percents: of total expense, and of family income.

Operation of the model depends on accessing, processing, and input of the various types of required data for a given year: income, family contribution, tuition and fees, room, board, books and other costs of attending college, financial aid program schedules, New York State income tax deductions, and others. At present, the most recent year for which the model is being run is 1981-82. It is especially for this reason that present discussion should concentrate on definitions and rationale developed in response to the needs of the planning process, that is the method, and not venture very far into evaluation of its present output, per se. But, as 1982-83 data become available in a matter of months, and especially as successive years' data begin to accumulate, annual reports on the output data themselves (with the trends and other findings they may reveal) will become appropriate.

Runs of the SSS Model (Tables 4-16)

These are included at the end of this paper: SUNY State-operated, dormitory residents and commuters (Tables 4 and 5); SUNY community colleges (Table 6); CUNY (Table 7); independent institutions, dormitory residents and commuters (Tables 8-15); proprietary institutions (Table 16). The remainder of the paper states definitions, identifies data sources, and provides discussion and rationale where needed.

Note that on each of the tables the column headings are assumed income levels, labeled line (A). The first item thereafter, line (B), is the total cost of attendance. Student support dollars from the various sources are subtracted from the attendance cost with the "formulas" (Pell and TAP) subtracted before the family-student contribution. The result is a series of stepped subtotals, each shown in dollar and percent (of total cost) form.

Beginning with Campus-Based aid, the stepped format is combined with three sub-columns or "tracks" within income categories, (1)-(3). The first track receives all aid apportioned by the SSS Model; the second receives no Campus-Based but does receive institutional aid; the third receives no non-formula aid at all. However, all three tracks receive or are eligible for Guaranteed Student Loans.

This tabular format has evolved out of experience, and out of discussions with the inter-sector advisory group. The stepped subtotals enable a reader to consider more than one definition of net cost, or family-student cost, as it is termed on Tables 4-16. The three subcolumns within income categories allow the reader to consider the fact that while some students do receive Campus-Based and institutional aid, many—and at present complete data are not available—do not. Thus, multiple definitions of net cost may be entertained.

Definitions, Data Sources, and Discussion

Family Income:

Net cost of attendance information was developed for high, high middle, low middle, and low income levels, the dollar levels based on quartiles established from 1981 NYS taxpayer data. Quartiles 1-4, however, are expressed in reverse order: 1, low; 2, low-middle; 3, high-middle; 4, high.

Source of the taxpayer data (actually sample data, about 200,000 or about 2.3 percent of all taxpayers) is the NYS Department of Taxation and Finance.[1] In establishing the quartiles two pertinent decisions were made: only incomes up to $50,000 were considered; and for quartiles 1-3, upper end-points rather than midpoints of the ranges were adopted. The results are shown as Table 1.

Table 1

1981-82 Income Levels

Quartile	Group	Range	Point
1	Low	$ 0- 8,999	$ 9,000
2	Low-Mid	9,000-13,999	14,000
3	High-Mid	14,000-22,999	23,000
4	High	23,000-49,000	36,500

Note: The figures are the end points for Quartiles 1-3, and the midpoint for Quartile 4.

Incomes are adjusted gross, which is used for tax purposes, and which ignores non-taxable income, if any. Alternatives were considered among staff and in consultation with the inter-sector advisory group. These were use of midpoints for quartiles 1-3 as well as 4, and use of NYS net taxable balance (NTB), which is used in calculation of Tuition Assistance Program (TAP) awards. The latter is adjusted gross less the NYS standard deduction (see Glossary), less the appropriate number of exemptions, at $750 each in 1981-82. Assuming a family of four, Table 2 shows the income levels selected, with the two alternative sets of income levels for comparison.

---

[1] NYS Department of Taxation and Finance, *Personal Income: Analysis of 1981 Personal Income Tax Returns*. Bureau of Research and Statistics, Albany, NY 1983, Table 1.

Table 2

Alternative 1981-82 Income Levels

Quartile	Group	Range	Midpoint	Endpoint	NTB
1	Low	$ 0- 8,999	$4,500	$ 9,000	$ 4,100
2	Low-Mid	9,000-13,999	11,500	14,000	8,760
3	High-Mid	14,000-22,999	18,500	23,000	17,600
4	High	23,000-49,999	36,500	36,500	31,100

[1] NYS Department of Taxation and Finance, Personal Income: Analysis of 1981 Personal Income Tax Returns. Bureau of Research and Statistics, Albany, NY 1983, Table 1.

*See Glossary.

Total Cost of Attendance:

Tuition for SUNY's State-operated campuses and for CUNY institutions is that "statutory" level prescribed by the respective Trustees, for New York State residents, for 1981-82. For SUNY community colleges and for the independent and proprietary sectors, tuition and fees data are from the Higher Education Data System (HEDS).

Other costs (books and supplies, room and board, transportation, etc.) have been established for each institutional category. This information has been gathered from several sources. The College Scholarship Service's *College Cost Book* for 1981-82 was most useful. For many of the independent institutions operating HEOP programs, budget estimates are on file. For the public institutions, central administration data were used. In preparation of these data, useful assumptions have been that commuter students live at home; and that other costs of attendance for commuter students may be estimated (where necessary) as 75 percent of those for dormitory resident students.

Tuition levels at SUNY State-operated campuses, and at CUNY, are uniform. In the independent and proprietary sectors, and for SUNY community colleges, averages weighted by full-time undergraduate enrollments were calculated. The independent institutions were grouped into four quartiles by full-time undergraduate enrollments, of which the weighted averages were: high tuition (and fees) $6,464; high-middle $5,157; low-middle $4,143; low $3,232. The total cost of attendance is the sum of tuition and fees plus other expenses: room and board, books, transportation, personal expenses. These numbers are also averages weighted by FTUG enrollments, for the institutions grouped as for tuition. The results, used to produce the information in Tables 4-16, are shown in Table 3.

Table 3

1981-82 Cost of Education

		Other Costs		Total Costs	
Category	T&F	Residential	Commuter	Residential	Commuter
SUNY					
State-operated	$1,075	$3,177	$2,383	$4,252	$3,458
Comm. Colleges	927	--	2,636	--	3,563
CUNY	$ 925	--	2,534	--	3,459
Independent*					
(1) $5,800_____	$6,464	$3,812	$2,859	$10,276	$9,323
(2) $4,400-5,799	5,137	3,630	2,723	8,787	7,880
(3) $3,800-4,399	4,143	3,647	2,735	7,790	6,878
(4) _____$3,800	3,232	3,356	2,517	6,588	5,749
Proprietary	$3,046	--	2,297	--	5,343

*Organized into tuition and fees quartiles by full-time undergraduate enrollment.

Pell Grant:

The Pell Grant program is an entitlement program; all students meeting certain criteria of income, need, and level of study are guaranteed aid. The amount of aid is determined by financial need and educational cost. A useful source of background information on this program is the annual end-of year report.[2] Specific information related to calculation of awards is found in the annual guides *Basic Grant Formula*[3] and *Pell Grant Payment Schedule.*[4]

In 1981-82 the minimum Pell Grant was $146; the maximum $1,670.

Amount of the grant is determined by means of calculating the appropriate deduction from the maximum grant. From income (adjusted gross) is subtracted Federal income tax (from *Instructions, Form 1040A*, 1981) for a family of four, joint return. Also subtracted is the 1981-82 Pell program family size offset for a family of 4 ($7,700). This remainder is multiplied by a 1981-82 factor of 0.105 to obtain the Student Eligibility Index (SEI) number. The SEI number, with the total cost of education, is entered into the payment schedule to obtain the size of the grant.

From the grant is subtracted the flat reduction. However, if any grant remains, the amount will not be less than the minimum of $146 (1981-82).

Using the required input data, the SSS Model will calculate the Pell Grant, and will also, in the case of commuter students, impose the Pell program limit for commuter students of (T+F + $1,500)/2, if appropriate.

Tuition Assistance Program (TAP) Award:

In developmental work thus far, including all results reported here, the TAP award is determined by subtracting the appropriate deduction from the maximum award based on Schedule C. In 1981-82 this was $1,800 (or tuition, whichever was less) for undergraduate students. Also from Schedule C are calculations of the deduction, based on NYS net taxable balance (NTB), which is adjusted gross income less the NYS standard deduction,* less exemptions at $750 (assuming 4 × $750 = $3,000). Continuing study and advice from the intersector technical advisory committee have led to the decision to focus on net costs of entering freshmen and to use, in all subsequent developmental work, Schedule X, which went into effect for entering freshmen in 1981-82. For successive years the schedule applicable to entering freshmen will be used.

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[2] *Pell Grants: End of Year Report 1980-81.* U.S. Department of Education, Office of Student Financial Assistance, Washington, D.C., August 1982.

[3] *Basic Grant Formula 1981-82.* U.S. Department of Education, Office of Student Finanical Assistance, Worksheet A, page 9.

[4] *Pell Grant Payment Schedule 1981-82.* U.S. Department of Education, Office of Student Financial Assistance.

* Adjusted gross income less than $11,876: standard deduction is $1,900.
Adjusted gross income $11,876-$14,999: standard deduction is 0.16.
Adjusted gross income more than $14,999: standard deduction is $2,400.

In 1981-82 the minimum TAP award was $250, which applied to qualified applicants with NTB of up to $25,000.

Where tuition is $1,800 or more, the deduction is from the maximum TAP award. Where tuition is less, the deduction is from the tuition level.

Given the required input data the SSS Model estimates the TAP award.

Family Student Contribution:

Source of this information is the College Scholarship Service.[5] The family contribution assumes one wage earner, family of four, assets of $10,000, only one child in college. The student contribution (same source) is $700. Income levels are adjusted gross income, that is excluding any nontaxable income.

While family-student contribution is a form of support, it is not aid. It is included in family student cost (or net cost), along with any Guaranteed Student Loan and any remaining cost after all sources of aid and support have been identified. A rather fundamental assumption of our work has been that family-student contribution is always forthcoming. In practice this is not always so, and somewhat different configurations of support and aid could be entertained, for example less family support, more reliance on borrowing.

Family-student contribution is line (E) on Tables 1-13. Remaining cost is shown directly below (E), and some readers might wish to regard this amount, for each of the four income categories, as an expression of unmet cost of college attendance. The reason is that the remaining sources of support are Campus-Based aid and institutional aid, which not all students with need receive; and Guaranteed Student Loans, which are important for many students, but which also, as debt load, become a long-term component of the students' personal economy.

It is at this point that Tables 4-16 combine the stepped, remaining-cost format with subcolumns or "tracks," (1) -(3). Track (1) assumes, to the extent that need exists, a student who receives Campus-Based aid, a GSL, and institutional aid. Track (2) assumes availability of only the GSL and institutional aid. Track (3) assumes that the student with financial need gets no nonformula aid, but that a GSL is available.

Each "track" arrives at a different last remaining cost, and a different family-student cost (unless, of course, there was relatively little financial need, in which case (2) and (3) may be the same; see Tables 4-7 for examples of this.)

Campus-Based Aid:

This category includes three Federal need-based programs which are administered by the colleges: the National Direct Student Loan (NDSL) program; the College Work-Study (CWS) program; and the Supplemental Educational Opportunity Grant (SEOG) program. Funding made available through the Campus-Based programs is reported annually by the institutions and the data are available (in this case for 1981-82) in the Higher Education Data System (HEDS).

At present Campus-Based aid is being estimated (by the SSS Model) as a combination of funding provided by the three programs combined. This is partly due to present limitations of the computer program, but it is also the result of judgment based on the limitations of the financial aid data. As the 1983 edition of the annual Regents report to the Governor and the Legislature on State student financial aid programs ("603 Report") noted:

> ...the data are in aggregate form and do not fully reflect such factors as the level of student participation in the various programs, the level of family income represented by the recipients or the degree to which students participate in more than one program. Second, institutional student aid policies are not demonstrated. Institutions vary in the use of aid which they directly administer, such as the Federal campus-based programs. Student aid packaging priorities are related to the kinds of students served, amounts of funds available, admission practices and a number of other considerations.[6]

Accordingly, for each sector, and each broad institutional type within sector, 1981-82 HEDS data are used to obtain an average amount of C-B aid per unduplicated dependent undergraduate recipient. This becomes the "cap" or maximum amount to be allocated to hypothetical students if need exists, for those reports in which receipt of C-B aid is being assumed. See Tables 4-16, sub-column (1).

Institutional Aid:

Grants, loans, and wages which may be from restricted or unrestricted institutional sources are included in this category. These data are reported annually and are in HEDS for 1981-82. However, the same note on data limitations which was quoted from the 603 Report, above, applies equally to institutional aid. It is known that sector and institutional practices vary widely on use of this form of assistance. At this time, information on family income of recipients, numbers of recipients who are aided from more than one institutional source, or other characteristics of recipients, is not available.

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[5] *College Cost Book* 81-82. College Scholarship Service. Table 5, page 18.

[6] *A Report by the Board of Regents to the Governor and Legislature on State Student Financial Aid Programs.* The State Education Department, December 1983, Page 53.

This is an area in which some carefully planned expanded data collection would be worthwhile both to the State Education Department and to the institutions. At present, for each sector and broad institutional type within sector, an aggregated average of institutional aid to undergraduates, from all sources, is obtained from HEDS to serve as a "cap" on this form of aid. Institutional aid is the last form of aid to be allocated to the extent that need still exists after all other forms of aid and support have been subtracted out of total cost of attendance. (See Tables 8-16, sub-columns (1) and (2).)

Guaranteed Student Loans:

Whether a long-term, low-interest loan constitutes financial aid or family-student cost will not be resolved here. While such a loan shares characteristics of both, in our work to date GSL's have been considered a deferred form of family-student contribution and thus a part of family-student, or net, cost of student attendance.

In 1981-82, the maximum GSL amount available to an undergraduate student per year was $2,500, subject (beginning in that year) to a five percent origination fee. Thus the practical maximum for our work has been $2,375.

Occasionally in the various runs we have made using the SSS Model a GSL for an unrealistically low amount has been allocated, see, for example, Table 1, subcolumn (1). No bank officer would write a guaranteed loan for less than $100 and few would consider such loans at levels under $800, as in Table 4. In reality these funds would come from some other source.

Remaining Cost

In our runs of the SSS Model, as in the real world, there are instances where, after all available sources of student support have been exhausted, some cost of attending college remains. For example, see Tables 8-16, line (I). This is last remaining cost; alternate terms are unmet need and last-met need.

By definition, this remaining cost is covered; otherwise enrollment could not take place. After much discussion we have assumed that source of the remaining needed dollars is the family or student, perhaps at considerable sacrifice.

Family-Student Cost:

Included are all costs of attendance, both immediate and deferred, after subtracting all financial aid: Pell, TAP, Campus-Based aid, institutional aid. Thus, the family-student cost, also called net cost, consists of the family-student contribution, the Guaranteed Student Loan (but the principal only, not the interest), and last remaining cost.

Other Considerations: Institutional Categories

At several points, for example the subsection on total cost of attendance, institutional types within sectors are referred to. Tables 4-16 are arranged by sector and institutional type. The sectors are of course SUNY, CUNY, the independent colleges and universities, and the proprietary colleges. The institutional types are very broad ones, and are essentially those specified in the directive to staff on net cost data which was included in the Bulletin of the Regents Statewide Plan.

The State University campuses are divided into two broad types: State-operated, and community colleges. The former includes the University Centers, the University Colleges, and the Specialized Colleges. Not included due to its nontraditional organization and purpose is Empire State College. Neither are the Statutory Colleges included, because their tuition and fees levels are not typical of the State-operated campuses generally. The community college category includes all community colleges in the SUNY system.

In our earlier work, the City University campuses had been divided into senior colleges and community colleges. However, because both the tuition and fees and the other costs of attendance data that we were using were identical, or virtually so, for both types, the two were combined to avoid pointless repetition. Should we become aware of different costs between types in the future, use of the Senior College and Community College categories would be resumed.

The independent sector is divided into four broad categories based on level of tuition and fees. HEDS data for 1981-82 were used to arrange these institutions in order of T+F level, high to low, and to establish quartiles based on full-time undergraduate enrollment. T+F ranges, and weighted average T+F for the four categories, were identified as shown in Table 3. These are "Groups 1-4 of the independent sector," as in Tables 8-15.

Degree-granting proprietary colleges are included as a single type, within that sector.

Other Considerations: Family-Student Characteristics

The family is assumed to be a traditional one, of four members, with one wage earner. Only one of the children is attending college. The family resides in-state. Its net assets are modest, $10,000.

Students are full-time undergraduates. Whether dormitory residents or commuters, they are financially dependent on their parents. Regardless of family income level, they each contribute an annual $700 to help meet costs of college attendance.

Table 4

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
SUNY STATE-OPERATED
FULL-TIME UNDERGRADUATE DORMITORY RESIDENT (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$4,252			$ 4,252			$ 4,252			$ 4,252	
Less:													
Pell	(C)		1,496			1,096			346			--	
TAP	(D)		994			669			250			--	
Remaining Cost			$1,762			$ 2,487			$ 3,656			$ 4,252	
As % (B)			41.4			58.5			86.0			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			4,252	
Remaining Cost			$1,062			$ 1,747			$ 1,835			$ --	
As % (B)			25.0			41.1			43.2			0.0	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	1,039	--	--	1,039	--	--	1,039	--	--	--	--	--
Remaining Cost		$ 23	$1,062	$1,062	$ 708	$ 1,747	$1,747	$ 796	$ 1,835	$1,835	--	--	--
As % (B)		0.5	25.0	25.0	16.7	41.1	41.1	18.7	43.2	43.2	0.0	0.0	0.0
Less:													
GSL	(G)	23	1,062	1,062	708	1,747	1,747	796	1,835	1,835	--	--	--
Remaining Cost		--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less:													
Institutional	(H)	--	--	--	--	--	--	--	--	--	--	--	--
Remaining Cost	(I)	--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Family-Student Cost (E)+(G)+(I)		$ 723	$1,762	$1,762	$1,448	$ 2,487	$2,487	$2,617	$ 3,656	$3,656	$4,252	$ 4,252	$4,252
As % (B)		17.0	41.4	41.4	34.1	58.5	58.5	61.6	86.0	86.0	100.0	100.0	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 5

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
SUNY STATE-OPERATED
FULL-TIME UNDERGRADUATE COMMUTER (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		3,458			3,458			3,458			$ 3,458	
Less:													
Pell	(C)		1,238			1,096			346			--	
TAP	(D)		994			669			250			--	
Remaining Cost			$1,226			$ 1,693			$ 2,862			$ 3,458	
As % (B)			35.5			49.0			82.8			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			3,458	
Remaining Cost			$ 526			$ 953			$ 1,041			--	
As % (B)			15.2			27.6			30.1			0.0	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(2)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	526	--	--	953	--	--	1,039	--	--	--	--	--
Remaining Cost		--	$ 526	$ 526	--	$ 953	$ 953	$ 2	$ 1,041	$1,041	--	--	--
As % (B)		0.0	15.2	15.2	0.0	27.6	27.6	0.1	30.1	30.1	0.0	0.0	0.0
Less:													
GSL	(G)	--	526	526	--	953	953	2	1,041	1,041	--	--	--
Remaining Cost		--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less:													
Institutional	(H)	--	--	--	--	--	--	--	--	--	--	--	--
Remaining Cost	(I)	--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Family-Student Cost (E)+(G)+(I)		$ 700	$1,226	$1,226	$ 740	$ 1,693	$1,693	$1,823	$ 2,862	$2,862	$3,458	$ 3,458	$3,458
As % (B)		20.2	35.5	35.5	21.4	49.0	49.0	52.7	82.8	82.8	100.0	100.0	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 6

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
SUNY COMMUNITY COLLEGES
FULL-TIME UNDERGRADUATE COMMUTER (DEPENDENT)

		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$3,563			$ 3,563			$ 3,563			$ 3,563	
Less:													
Pell	(C)		1,164			1,096			346			--	
TAP	(D)		846			521			250			--	
Remaining Cost			$1,553			$ 1,946			$ 2,967			$ 3,563	
As % (B)			43.6			54.6			83.3			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			3,563	
Remaining Cost			$ 853			$ 1,206			$ 1,146			--	
As % (B)			23.9			33.9			32.2			0.0	
Less:													
Campus-Based	(F)	724	--	--	724	--	--	724	--	--	--	--	--
Remaining Cost		$ 129	$ 853	$ 853	$ 482	$ 1,208	$1,206	$ 422	$ 1,146	$1,146	--	--	--
As % (B)		3.6	23.9	23.9	13.5	33.9	33.9	11.8	32.2	32.2	0.0	0.0	0.0
Less:													
GSL	(G)	129	853	853	482	1,206	1,206	422	1,146	1,146	--	--	--
Remaining Cost		--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less:													
Institutional	(H)	--	--	--	--	--	--	--	--	--	--	--	--
Remaining Cost	(I)	--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Family-Student Cost (E)+(G)+(I)		$ 829	$1,553	$1,553	$1,222	$ 1,946	$1,946	$2,243	$ 2,967	$2,967	$3,563	$ 3,563	$3,563
As % (B)		23.3	43.6	43.6	34.3	54.6	54.6	63.0	83.3	83.3	100.0	100.0	100.0

[1] Adjusted gross income. Adjusted gross income is that use for tax purposes and ignores non-taxable income if any.

Notes:

(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the reallocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 7

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
CUNY
FULL-TIME UNDERGRADUATE COMMUTER (DEPENDENT)

Family Income[1]	(A)	$9,000	$14,000	$23,000	$36,500
Total Cost of Attendance	(B)	$3,459	$ 3,459	$ 3,459	$ 3,459
Less:					
Pell	(C)	1,163	1,096	346	--
TAP	(D)	844	519	250	--
Remaining Cost		$1,452	$ 1,844	$ 2,863	$ 3,459
As % (B)		42.0	53.3	82.8	100.0
Less:					
Family-Student Contribution	(E)	700	740	1,821	3,459
Remaining Cost		$ 752	$ 1,104	$ 1,042	--
As % (B)		21.7	31.9	30.1	0.0

		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	702	--	--	702	--	--	702	--	--	--	--	--
Remaining Cost		$ 50	$ 752	$ 752	$ 402	$ 1,104	$1,104	$ 340	$ 1,042	$1,042	--	--	--
As % (B)		1.5	21.7	21.7	11.6	31.9	31.9	9.8	30.1	30.1	0.0	0.0	0.0
Less:													
GSL	(G)	50	752	752	402	1,104	1,104	340	1,042	1,042	--	--	--
Remaining Cost		--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less:													
Institutional	(H)	--	--	--	--	--	--	--	--	--	--	--	--
Remaining Cost	(I)	--	--	--	--	--	--	--	--	--	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Family-Student Cost (E)+(G)+(I)		$ 750	$1,452	$1,452	$1,142	$ 1,844	$1,844	$2,161	$ 2,863	$2,863	$3,459	$ 3,459	$3,459
As % (B)		21.7	42.0	42.0	33.0	53.3	53.3	62.5	82.8	82.8	100.0	100.0	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 8

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
INDEPENDENT SECTOR GROUP 1
FULL-TIME UNDERGRADUATE DORMITORY RESIDENT (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$10,276			$10,276			$10,276			$10,276	
Less:													
Pell	(C)		1,496			1,096			346			--	
TAP	(D)		1,719			1,394			471			--	
Remaining Cost			$7,061			$ 7,786			$ 9,459			$10,276	
As % (B)			68.7			75.8			92.1			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			4,464	
Remaining Cost			$6,361			$ 7,046			$ 7,638			$ 5,812	
As % (B)			61.9			68.6			74.3			56.6	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	1,253	--	--	1,253	--	--	1,253	--	--	1,253	--	--
Remaining Cost		$5,108	$6,361	$6,361	$5,793	$ 7,046	$7,046	$6,385	$ 7,638	$7,638	$4,559	$ 5,812	$5,812
As % (B)		49.7	61.9	61.9	56.4	68.6	68.6	62.1	74.3	74.3	44.4	56.6	56.6
Less:													
GSL	(G)	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375
Remaining Cost		$2,733	$3,986	$3,986	$3,418	$ 4,671	$4,671	$4,010	$ 5,263	$5,263	$2,184	$ 3,437	$3,437
As % (B)		26.6	38.8	38.8	33.3	45.5	45.5	39.0	51.2	51.2	21.3	33.5	33.5
Less:													
Institutional	(H)	2,087	2,087	--	2,087	2,087	--	2,087	2,087	--	2,087	2,087	--
Remaining Cost	(I)	$ 646	$1,899	$3,986	$1,331	$ 2,584	$4,671	$1,923	$ 3,176	$5,263	$ 97	$ 1,350	$3,437
As % (B)		6.3	18.5	38.8	13.0	25.2	45.5	18.7	30.9	51.2	0.9	13.1	33.5
Family-Student Cost (E)+(G)+(I)		$3,721	$4,974	$7,061	$4,446	$ 5,699	$7,786	$6,119	$ 7,372	$9,459	$6,936	$ 8,189	$10,276
As % (B)		36.2	48.4	68.7	43.3	55.5	75.8	59.6	71.7	92.1	67.5	79.7	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 9

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
INDEPENDENT SECTOR GROUP 2
FULL-TIME UNDERGRADUATE DORMITORY RESIDENT (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$8,787			$ 8,787			$ 8,787			$ 8,787	
Less:													
Pell	(C)		1,496			1,096			346			--	
TAP	(D)		1,719			1,394			471			--	
Remaining Cost			$5,572			$ 6,297			$ 7,970			$ 8,787	
As % (B)			63.4			71.7			90.7			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			4,464	
Remaining Cost			$4,872			$ 5,557			$ 6,149			$ 4,323	
As % (B)			55.5			63.2			70.0			49.2	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-based	(F)	1,175	--	--	1,175	--	--	1,175	--	--	1,175	--	--
Remaining Cost		$3,697	$4,872	$4,872	$4,382	$ 5,557	$5,557	$4,974	$ 6,149	$6,149	$3,148	$ 4,323	$4,323
As % (B)		42.1	55.5	55.5	49.9	63.2	63.2	56.6	70.0	70.0	35.8	49.2	49.2
Less:													
GSL	(G)	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375
Remaining Cost		$1,322	$2,497	$2,497	$2,007	$ 3,182	$3,182	$2,599	$ 3,774	$3,774	$ 773	$ 1,948	$1,948
As % (B)		15.1	28.4	28.4	22.8	36.2	36.2	29.6	43.0	43.0	8.8	22.2	22.2
Less:													
Institutional	(H)	1,195	1,195	--	1,195	1,195	--	1,195	1,195	--	773	1,195	--
Remaining Cost	(I)	$ 127	$1,302	$2,497	$ 812	$ 1,987	$3,182	$1,404	$ 2,579	$3,774	--	$ 753	$1,948
As % (B)		1.5	14.8	28.4	9.2	22.6	36.2	16.1	29.4	43.0	0.0	8.6	22.2
Family-Student Cost (E)+(G)+(I)		$3,202	$4,377	$5,572	$3,927	$ 5,102	$6,297	$5,600	$ 6,775	$7,970	$6,839	$ 7,592	$8,787
As % (B)		36.4	49.8	63.4	44.7	58.1	71.7	63.7	77.1	90.7	77.8	86.4	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 10

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
INDEPENDENT SECTOR GROUP 3
FULL-TIME UNDERGRADUATE DORMITORY RESIDENT (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$7,790			$ 7,790			$ 7,790			$ 7,790	
Less:													
Pell	(C)		1,496			1,096			346			--	
TAP	(D)		1,719			1,394			471			--	
Remaining Cost			$4,475			$ 5,300			$ 6,973			$ 7,790	
As % (B)			58.7			68.0			89.5			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			4,464	
Remaining Cost			$3,875			$ 4,560			$ 5,152			$ 3,326	
As % (B)			49.7			58.5			66.1			42.7	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	1,017	--	--	1,017	--	--	1,017	--	--	1,017	--	--
Remaining Cost		$2,858	$3,875	$3,875	$3,543	$ 4,560	$4,560	$4,135	$ 5,152	$5,152	$2,309	$ 3,326	$3,326
As % (B)		36.7	49.7	49.7	45.5	58.5	58.5	53.1	66.1	66.1	29.6	42.7	42.7
Less:													
GSL	(G)	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,309	2,375	2,375
Remaining Cost		$ 483	$1,500	$1,500	$1,168	$ 2,185	$2,185	$1,760	$ 2,777	$2,777	--	$ 951	$ 951
As % (B)		6.2	19.3	19.3	15.0	28.1	28.1	22.6	35.7	35.7	0.0	12.2	12.2
Less:													
Institutional	(H)	483	948	--	948	948	--	948	948	--	--	948	--
Remaining Cost	(I)	--	$ 552	$1,500	$ 220	$ 1,237	$2,185	$ 812	$ 1,829	$2,777	--	$ 3	$ 951
As % (B)		0.0	7.1	19.3	2.8	15.9	28.1	10.4	23.5	35.7	0.0	0.0	12.2
Family-Student Cost (E)+(G)+(I)		$3,075	$3,627	$4,575	$3,335	$ 4,352	$5,300	$5,008	$ 6,025	$6,973	$6,773	$ 6,842	$7,790
As % (B)		39.5	46.6	58.7	42.8	55.9	68.0	64.3	77.3	89.5	87.0	87.0	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:

(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 11

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
INDEPENDENT SECTOR GROUP 4
FULL-TIME UNDERGRADUATE DORMITORY RESIDENT (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$6,588			$ 6,588			$ 6,588			$ 6,588	
Less:													
Pell	(C)		1,496			1,096			346			--	
TAP	(D)		1,719			1,394			471			--	
Remaining Cost			$3,373			$ 4,098			$ 5,771			$ 6,588	
As % (B)			51.2			62.2			87.6			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			4,464	
Remaining Cost			$2,673			$ 3,358			$ 3,950			$ 2,124	
As % (B)			40.6			51.0			60.0			32.2	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	944	--	--	944	--	--	944	--	--	944	--	--
Remaining Cost		$1,729	$2,673	$2,673	$2,414	$ 3,358	$3,358	$3,006	$ 3,950	$3,950	$1,180	$ 2,124	$2,124
As % (B)		26.3	40.6	40.6	36.6	51.0	51.0	45.6	60.0	60.0	17.9	32.2	32.2
Less:													
GSL	(G)	1,729	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	1,180	2,124	2,124
Remaining Cost		--	$ 298	$ 298	$ 39	$ 983	$ 983	$ 631	$ 1,575	$1,575	--	--	--
As % (B)		0.0	4.5	4.5	0.6	14.9	14.9	9.6	23.9	23.9	0.0	0.0	0.0
Less:													
Institutional	(H)	--	298	--	39	845	--	631	845	--	--	--	--
Remaining Cost	(I)	--	--	$ 298	--	$ 138	$ 983	--	$ 730	$1,575	--	--	--
As % (B)		0.0	0.0	4.5	0.0	2.1	14.9	0.0	11.1	23.9	0.0	0.0	0.0
Family-Student Cost (E)+(G)+(I)		$2,429	$3,075	$3,373	$3,115	$ 3,253	$4,098	$4,196	$ 4,926	$5,771	$5,644	$ 6,588	$6,588
As % (B)		36.9	46.7	51.2	47.3	49.1	62.2	63.7	74.8	87.6	85.7	100.0	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 12

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
INDEPENDENT SECTOR GROUP I
FULL-TIME UNDERGRADUATE COMMUTER (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$9,323			$ 9,323			$ 9,323			$ 9,323	
Less:													
Pell	(C)		1,496			1,096			346			--	
TAP	(D)		1,719			1,394			471			--	
Remaining Cost			$6,108			$ 6,833			$ 8,506			$ 9,323	
As % (B)			65.5			73.3			91.2			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			4,464	
Remaining Cost			$5,408			$ 6,093			$ 6,685			$ 4,859	
As % (B)			58.0			65.4			71.7			52.1	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	1,253	--	--	1,253	--	--	1,253	--	--	1,253	--	--
Remaining Cost		$4,155	$5,408	$5,408	$4,840	$ 6,093	$6,093	$5,432	$ 6,685	$6,685	$3,606	$ 4,859	$4,859
As % (B)		44.6	58.0	58.0	51.9	65.4	65.4	58.3	71.7	71.7	38.7	52.1	52.1
Less:													
GSL	(G)	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375
Remaining Cost		$1,780	$3,033	$3,033	$2,465	$ 3,718	$3,718	$3,057	$ 4,310	$4,310	$1,231	$ 2,484	$2,484
As % (B)		19.1	32.5	32.5	26.4	39.9	39.9	32.8	46.2	46.2	13.2	26.6	26.6
Less:													
Institutional	(H)	1,780	2,087	--	2,087	2,087	--	2,087	2,087	--	1,231	2,087	--
Remaining Cost	(I)	--	$ 946	$3,033	$ 378	$ 1,631	$3,718	$ 970	$ 2,223	$4,310	--	$ 397	$2,484
As % (B)		0.0	10.2	32.5	4.1	17.5	39.9	10.4	23.8	46.2	0.0	4.3	26.6
Family-Student Cost (E)+(G)+(I)		$3,075	$4,021	$6,108	$3,493	$ 4,746	$6,833	$5,166	$ 6,419	$8,506	$6,839	$ 7,236	$9,323
As % (B)		33.0	43.1	65.5	37.5	50.9	73.3	55.4	68.9	91.2	73.4	77.6	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 13

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
INDEPENDENT SECTOR GROUP 2
FULL-TIME UNDERGRADUATE COMMUTER (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$7,880			$ 7,880			$ 7,880			$ 7,880	
Less:													
Pell	(C)		1,496			1,096			346			--	
TAP	(D)		1,719			1,394			471			--	
Remaining Cost			$4,665			$ 5,390			$ 7,063			$ 7,880	
As % (B)			59.2			68.4			89.6			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			4,464	
Remaining Cost			$3,965			$ 4,650			$ 5,242			$ 3,416	
As % (B)			50.3			59.0			66.5			43.4	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	1,175	--	--	1,175	--	--	1,175	--	--	1,175	--	--
Remaining Cost		$2,790	$3,965	$3,965	$3,475	$ 4,650	$4,650	$4,067	$ 5,242	$5,242	$2,241	$ 3,416	$3,416
As % (B)		35.4	50.3	50.3	44.1	59.0	59.0	51.6	66.5	66.5	28.4	43.4	43.4
Less:													
GSL	(G)	2,357	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,241	2,375	2,375
Remaining Cost		$ 415	$1,590	$1,590	$1,100	$ 2,275	$2,275	$1,692	$ 2,867	$2,867	--	$ 1,041	$1,041
As % (B)		5.3	20.2	20.2	14.0	28.9	28.9	21.5	36.4	36.4	0.0	13.2	13.2
Less:													
Institutional Aid	(H)	415	1,195	--	1,100	1,195	--	1,195	1,195	--	--	1,041	--
Remaining Cost	(I)	--	$ 395	$1,590	--	$ 1,080	$2,275	$ 497	$ 1,672	$2,867	--	--	$1,041
As % (B)		0.0	5.0	20.2	0.0	13.7	28.9	6.3	21.2	36.4	0.0	0.0	13.2
Family-Student Cost (E)+(G)+(I)		$3,075	$3,470	$4,665	$3,115	$ 4,195	$5,390	$4,693	$ 5,868	$7,063	$6,705	$ 6,839	$7,880
As % (B)		39.0	44.0	59.2	39.5	53.2	68.4	59.6	74.5	89.6	85.1	86.8	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. T[illegible]ta do not represent actual resources in 1981-82.

Table 14

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
INDEPENDENT SECTOR GROUP 3
FULL-TIME UNDERGRADUATE COMMUTER (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$6,878			$ 6,878			$ 6,878			$ 6,878	
Less:													
Pell	(C)		1,496			1,096			346			--	
TAP	(D)		1,719			1,394			471			--	
Remaining Cost			$3,663			$ 4,388			$ 6,061			$ 6,878	
As % (B)			53.3			63.8			88.1			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			4,464	
Remaining Cost			$2,963			$ 3,648			$ 4,240			$ 2,414	
As % (B)			43.1			53.0			61.7			35.1	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	1,017	--	--	1,017	--	--	1,017	--	--	1,017	--	--
Remaining Cost		$1,946	$2,963	$2,963	$2,631	$ 3,648	$3,648	$3,223	$ 4,240	$4,240	$1,397	$ 2,414	$2,414
As % (B)		28.3	43.1	43.1	38.3	53.0	53.0	46.9	61.7	61.7	20.3	35.1	35.1
Less:													
GSL	(G)	1,946	2,375	2,375	2,375	2,375	2,375	2,375	2,375	2,375	1,397	2,375	2,375
Remaining Cost		--	$ 588	$ 588	$ 256	$ 1,273	$1,273	$ 848	$ 1,865	$1,865	--	$ 39	$ 39
As % (B)		0.0	8.6	8.6	3.7	18.5	18.5	12.3	27.1	27.1	0.0	0.6	0.6
Less:													
Institutional	(H)	--	588	--	256	948	--	848	948	--	--	39	--
Remaining Cost	(I)	--	--	$ 588	--	$ 325	$1,273	--	$ 917	$1,865	--	--	$ 39
As % (B)		0.0	0.0	8.6	0.0	4.7	18.5	0.0	13.3	27.1	0.0	0.0	0.6
Family-Student Cost (E)+(G)+(I)		$2,646	$3,075	$3,663	$3,115	$ 3,440	$4,388	$4,196	$ 5,113	$6,061	$5,861	$ 6,839	$6,878
As % (B)		38.5	44.7	53.3	45.3	50.0	63.8	61.0	74.3	88.1	85.2	99.4	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 15

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
INDEPENDENT SECTOR GROUP 4
FULL-TIME UNDERGRADUATE COMMUTER (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$5,749			$ 5,749			$ 5,749			$ 5,749	
Less:													
Pell	(C)		1,496			1,096			346			--	
TAP	(D)		1,719			1,394			471			--	
Remaining Cost			$2,534			$ 3,259			$ 4,932			$ 5,749	
As % (B)			44.1			56.7			85.8			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			4,464	
Remaining Cost			$1,834			$ 2,519			$ 3,111			$ 1,285	
As % (B)			31.9			43.8			54.1			22.4	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	944	--	--	944	--	--	944	--	--	944	--	--
Remaining Cost		$ 890	$1,834	$1,834	$1,575	$ 2,519	$2,519	$2,167	$ 3,111	$3,111	$ 341	$ 1,285	$1,285
As % (B)		15.5	31.9	31.9	27.4	43.8	43.8	37.7	54.1	54.1	5.9	22.4	22.4
Less:													
GSL	(G)	890	1,834	1,834	1,575	2,375	2,375	2,167	2,375	2,375	341	1,285	1,285
Remaining Cost		--	--	--	--	$ 144	$ 144	--	$ 736	$ 736	--	--	--
As % (B)		0.0	0.0	0.0	0.0	2.5	2.5	0.0	12.8	12.8	0.0	0.0	0.0
Less:													
Institutional	(H)	--	--	--	--	144	--	--	736	--	--	--	--
Remaining Cost	(I)	--	--	--	--	--	$ 144	--	--	$ 736	-	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	12.8	0.0	0.0	0.0
Family-Student Cost (E)+(G)+(I)		$1,590	$2,534	$2,534	$2,315	$ 3,115	$3,259	$3,988	$ 4,196	$4,932	$4,805	$ 5,749	$5,749
As % (B)		27.7	44.1	44.1	40.3	54.2	56.7	69.4	73.0	85.8	83.6	100.0	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Table 16

STUDENT SUPPORT SOURCES MODEL OUTPUT 1981-82
PROPRIETARY
FULL-TIME UNDERGRADUATE COMMUTER (DEPENDENT)

Family Income[1]	(A)		$9,000			$14,000			$23,000			$36,500	
Total Cost of Attendance	(B)		$5,343			$ 5,343			$ 5,343			$ 5,343	
Less:													
Pell	(C)		1,496			1,096			346			--	
TAP	(D)		1,719			1,394			471			--	
Remaining Cost			$2,128			$ 2,853			$ 4,526			$ 5,343	
As % (B)			39.8			53.4			84.7			100.0	
Less:													
Family-Student Contribution	(E)		700			740			1,821			4,464	
Remaining Cost			$1,428			$ 2,113			$ 2,705			$ 879	
As % (B)			26.7			39.6			50.6			16.5	
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Less:													
Campus-Based	(F)	761	--	--	761	--	--	761	--	--	761	--	--
Remaining Cost		$ 667	$1,428	$1,428	$1,352	$ 2,113	$2,113	$1,944	$ 2,705	$2,705	$ 118	$ 879	$ 879
As % (B)		12.5	26.7	26.7	25.3	39.6	39.6	36.4	50.6	50.6	2.2	16.5	16.5
Less:													
GSL	(G)	667	1,428	1,428	1,352	2,113	2,113	1,944	2,375	2,375	118	879	879
Remaining Cost		--	--	--	--	--	--	--	$ 330	$ 330	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	6.2	0.0	0.0	0.0
Less:													
Institutional	(H)	--	--	--	--	--	--	--	330	--	--	--	--
Remaining Cost	(I)	--	--	--	--	--	--	--	--	$ 330	--	--	--
As % (B)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	0.0
Family-Student Cost (E)+(G)+(I)		$1,367	$2,128	$2,128	$2,092	$ 2,853	$2,853	$3,765	$ 4,196	$4,526	$4,582	$ 5,343	$5,343
As % (B)		25.6	39.8	39.8	39.2	53.4	53.4	70.5	78.5	84.7	85.8	100.0	100.0

[1] Adjusted gross income. Adjusted gross income is that used for tax purposes and ignores non-taxable income if any.

Notes:
(1) Receives all aid.
(2) Receives no Campus-Based aid, but all other aid.
(3) Receives no Campus-Based aid, no institutional aid.

This simulation presents a hypothetical estimate of the allocation of student aid across sectors and income levels for one category of student. The data do not represent actual resources in 1981-82.

Glossary

Adjusted Gross Income

Income used for Federal and State income tax purposes, i.e., does not include any non-taxable income. (See also Income Levels, Net Taxable Balance, Standard Deduction.)

Campus-Based Programs

The three federally funded student financial aid programs that are directly administered by colleges—Supplemental Educational Opportunity Grant program, National Direct Student Loan program, and the College Work-Study program. In this paper, in the absence of more precise information, the total of aid from the three programs is the average total aid per student from the three programs for the sector and category of institution, or remaining need, whichever is less.

College Work-Study

The College Work-Study program was established by the Federal government to increase the availability of jobs, thus helping needy students finance their college education. Employment opportunities are available for students with demonstrated financial need to earn a portion of their college expenses in part-time, on-campus or off-campus work while they attend college.

Commuter Student

One who lives at home with his or her parents.

Dependent Student

One who is claimed by parents as a dependent for income tax purposes; usually with permanent residence in parents' home; relying on parents for food, clothing, and shelter or the funds to meet costs of same.

Family Contribution

The amount, determined by analysis of family financial situations or estimated by means of schedules based on such analyses, that a family can reasonably be expected to pay toward the costs of attendance.

Family-Student Cost of Attendance (Net Cost of Attendance)

Total cost of attendance less all financial aid: Pell, TAP, Campus-Based, institutional; also: Net Cost of Attendance. (Thus, includes family-student contribution and last remaining cost after all aid is assigned. Guaranteed Student Loans may be considered either as a form of aid or as a deferred cost.)

Guaranteed Student Loan (GSL) Program

This is a program of the Federal government, administered by the states. An undergraduate may borrow up to $2,500 per academic year, up to a total of $12,500. The student obtains the loan from a participating New York lending institution; it is insured by the Higher Education Services Corporation. If the adjusted gross income is $30,000 or less, a student is eligible for a full interest subsidy during the time he or she is in school, and for a following 6-month grace period. A "loan origination fee" equal to five percent of the amount of the loan is deducted from the amount disbursed.

Income Levels

Four have been assumed, based on sample data for all New York taxpayers for tax year 1981 (the base year for all calculations in this paper) published by the New York State Department of Taxation and Finance:

	Federal Adjusted Gross Income	Approximate Equivalent New York Taxable Income
1. Low	$ 9,000	$ 4,100
2. Low-Middle	$14,000	$ 8,760
3. High-Middle	$23,000	$17,600
4. High	$36,500	$31,100

(See also Adjusted Gross Income, Net Taxable Balance, Standard Deduction.)

Institutional Aid

This is aid from institutional sources in any form (e.g., grants, work, loan, waiver). In this paper, in the absence of more precise information, institutional aid may not exceed the average award at the sector and category of institution, or remaining need, whichever is less.

National Direct Student Loan (NDSL) Program

The National Direct Student Loan program (NDSL) is one of three Federal campus-based programs administered by colleges and universities. Undergraduate students may borrow up to $3,000 in the first two years. The aggregate loan for undergraduate study may not exceed $6,000.

Net Taxable Balance (NTB)

Adjusted gross income, less number of exemptions x $750 (in 1981-82—the base year for all calculations in this paper), less New York State standard deduction; used for calculating TAP award. (See also Adjusted Gross Income, Income Levels, Standard Deduction).

Other Costs of Student Attendance

These are room, board, books and supplies, transportation, and other personal or miscellaneous expenses including such categories as dry-cleaning, laundry, recreation, or medical insurance.

Packaging, Financial Aid

In order to make the most effective use of their student aid funds, institutions typically grant assistance to a student through a "package" of aid, which may include a combination of scholarship or grant and self-help such as loan or work. Adjustments in the amount and composition of the package are made from year to year as the financial and academic circumstances of the applicants or the resources of the institution change. Some institutions award aid for the entire period of study unless circumstances change; others require annual application.

Pell Grant Program

The federally administered Pell Grant program (formerly called the Basic Educational Opportunity Grant program) is the largest need-based student aid program in the Nation. In 1981-82, over 275,000 New York undergraduates received Pell Grants ranging from $146 to $1,670. The amount a student receives depends on need, the cost of education at the particular college he or she attends, the length of the program in which he or she is enrolled, and whether enrollment is full-or part-time. Graduate students are not eligible, nor are students who have previously received a bachelor's degree.

Resident Student

One who lives in institutional housing, on- or off-campus, also: Dormitory Resident.

Standard Deduction (New York State)

For adjusted gross income less than $11,876 this is $1,900; for adjusted gross income $11,876 - $14,999 it is 0.16 of adjusted gross; for adjusted gross income over $14,999 it is $2,400. (See also Adjusted Gross Income, Income Levels, Net Taxable Balance.)

Student Contribution

The amount estimated by the College Scholarship Service, $700 in 1981-82, that a student can reasonably be expected to pay toward the costs of attendance (from summer earnings, savings, etc.).

Supplemental Educational Opportunity Grant (SEOG) Program

The Supplemental Educational Opportunity Grant program (SEOG) is one of three Federal "campus-based" programs. "Campus-based" means that, while the money comes from the Federal government, the colleges distribute the money to students who demonstrate need. Recipients must be U.S. citizens enrolled at least half-time in an undergraduate program at an accredited college or university. Awards are based on need, and can range from $200 to $2,000.

Total Cost of Attendance

Tuition and fees plus other costs of attendance, also: Student Expense Budget.

Tuition and Fees

Tuition is the charge assessed for instruction. Fees may be assessed to pay for such services as use of the library, health service, athletic facilities, etc.

Tuition Assistance Program (TAP)

The Tuition Assistance Program is a New York State entitlement program. There is neither a qualifying examination nor a limited number of awards. The applicant must be a New York State resident; matriculated in an approved New York State postsecondary program; have a family net taxable income below $25,001 (in 1981-82); and be charged a tuition of at least $200 per year.

Appendix C

PREPARING UNDERPREPARED APPLICANTS FOR COLLEGE-LEVEL STUDY

An Issue Paper

The sixth issue for long-range planning set forth in this Statewide Plan, preparation of underprepared applicants for college-level study, has statewide implications for both schools and colleges. At the elementary and secondary levels, the Regents have completed a thorough review of goals, priorities, and curriculum which will directly enhance high school graduates' preparation for college (The Regents Action Plan to Improve Elementary and Secondary Education Results in New York). At the postsecondary level, State funding continues to support underprepared students through major opportunity programs in the independent and public sectors, and through the Tuition Assistance Program (TAP) and Supplemental Tuition Assistance Program (STAP).

This paper addresses a number of current or potential problem areas: the search for minimum definitions of preparedness; the need to accommodate diverse new groups beginning to enter college in sizable numbers; the need to ensure high quality of programs for the underprepared; the need to minimize programmatic and funding duplication. Not least is the reality that, however effective upgradings of elementary and secondary education, the results are essentially long-term. While the numbers of the academically underprepared will, it is to be hoped, diminish, they will not disappear.

As necessary background for the recommendations of this Plan, this issue paper develops three topics: (I) the prepared student; (II) current level of preparedness of high school graduates; and (III) how the colleges serve the underprepared.

I. The Prepared Student

There are two ways of defining preparation for college. Traditionally, adequate preparation has been expressed as a given number of units in the major discipline areas. Often, additional dimensions such as academic performance and standardized test scores are included. More recently, preparation has been described in terms of competencies and knowledge of subject matter which students should have to begin college work.

A. The Traditional Definition: the College Preparatory Curriculum

In response to rising public concern for the quality of elementary and secondary education, many states in most regions of the country have reexamined their college preparatory curricula, often providing concise guidance to students, their parents, and their schools.

Another result of national concern for education has been the appearance of a number of widely publicized reports focusing attention on what should be learned in the first 12 years of schooling, whether preparatory to intelligent participation in society or to further study, and including recommendations for curriculum revision. One of the first to appear, *The Paideia Proposal* (1982), outlines a basic 12-year curriculum—the same for all pupils— based on both organized knowledge and intellectual skills. For the Paideia Group, headed by Mortimer J. Adler, preparation for college and for living are the same, and no one should receive less. The proposal is stimulating in its uncompromising call for a high standard of preparation for every student. Another, more widely known, report was that of the National Commission on Excellence in Education (1983). Its central premise was indicated by the title: *A Nation at Risk: The Imperative for Educational Reform*. Focusing mainly on high schools, the report recommended that all students be required to take foundation courses in what it called the Five New Basics: four years of English, three years each of mathematics, science, and social studies, and one-half year of computer science. For college-bound students, two years of a foreign language were also recommended.

In New York, a curricular approach to college preparation has long been used in the form of requirements for the Regents diploma. Although not itself a requirement for admission to college, the Regents diploma is widely regarded—in the State and elsewhere— as a standard for college preparation. The new Regents Goals for Elementary and Secondary Education, included in the Action Plan, increase the curricular requirements for both local and Regents diplomas, continue and increase standardized pupil testing at several points, and require annual public reports by local school boards on pupil performance. Requirements for Regents and local diplomas, starting in September 1985, include the following academic courses in grades 9 through 12:

Subject	Regents	Local
English	4 units	4 units
Mathematics	2 units	2 units
Science	2 units	2 units
Social Studies	4 units	4 units
Foreign Languages	3 units*	*
Art or Music	1 unit	1 unit

In addition to the required subjects, students will be required to complete *either* two three-unit sequences or one five-unit sequence chosen from a list of subjects which varies according to the diploma sought (local or Regents). The sequence requirement is intended to ensure both sufficient grounding in basic skills and flexibility to accommodate individual student goals and preferences.

Colleges themselves either state or imply their definitions of preparedness in their catalogs. A review of New York catalogs shows that, with variations among institutional types, the requirements fall under five headings:

1) Performance in secondary school;
2) Distribution of subjects in secondary school;
3) Performance on standardized tests;
4) Special competencies;
5) Personal qualities.

Performance in High School

The basic expectation is graduation from high school. Public four-year colleges include additional general criteria. The CUNY senior colleges state the University open admission requirement for their institutional type: top third of the graduating class or an 80 percent high school average or better in academic courses. Larger public and independent colleges and universities emphasize their competitive admissions policies and warn that such qualifications as the quality of the high school record, rigor of program, rank in class, and Regents examination scores will be scrutinized: "Honors or Regents courses are expected." "Graduation from an acceptable secondary school." "Traditional college preparatory program."

Distribution of High School Subjects

Community and agricultural and technical colleges emphasize the appropriateness of the secondary school curriculum in terms of the desired college program. Four-year colleges state general recommended combinations of subjects, usually indicating some flexibility. There are, however, stipulations for specific majors or programs, as in physical sciences, engineering, or nursing.

The standard mix appears to be: English, 4 units; mathematics, 3; language, 3 (sometimes the *same* language being stipulated); laboratory science, 2. Frequently institutions specify one or two years of history, or familiarity with American government.

Standardized Tests

The major tendency is to require either the SAT or ACT. Community colleges and smaller independent institutions tend to recommend, rather than require, submission of test scores; larger or more selective institutions tend to require the SAT (sometimes specifying a minimum total score), plus two or three achievement tests.

Special Competencies

Most frequent is the reminder that specific schools or departments may have their own requirements. Schools of music and the performing and visual arts specify auditions and portfolios. Specialized colleges often require specialized background skills (such as mechanical or technical drawing, for applicants to schools with technical programs). A proficiency skills test may be required, with noncredit remedial work provided for students who need it. Selective institutions (both public and independent) may require demonstration of ability to express ideas in writing.

Personal Qualities

These, when specified, are the most elusive of all: "Character." "Sufficient maturity to function in the social and intellectual framework of college life." Most colleges require references; over half require (or strongly urge) a personal interview.

Whatever requirements or recommendations for admission are stated in college catalogs, most institutions, for a variety of reasons, admit a number of students who do not conform to these expectations. State and Federal opportunity programs encourage institutions to admit the economically and educationally disadvantaged, specify the services which these students will need in order to succeed, and provide funding for those services. Other students who are underprepared are admitted because they are judged to have the potential for profiting from college education. Still, the admissions requirements imply a standard of preparedness which is expected if students are to succeed in their college education.

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* Starting with the high school graduating class of 1992, all public school students will be required to have at least one unit of instruction in a language other than English at some time during grades K-9. For the graduating class of 1994, this requirement will be two units.

B. Competencies and Subject Matter Mastery

As a basis for beginning public discussion, sectors and institutions were asked to address, in their 1984 master plans, the minimum expectations of competencies and subject matter that the high school graduate should possess to undertake postsecondary study. Their responses represent a beginning of this task. No State-mandated entrance requirements exist; nor are they contemplated. Nevertheless, despite the variation in institutions' expectations of entering students, it would be desirable for the postsecondary community as a whole to articulate a set of minimum expectations of competencies and knowledge, upon which each institution would build in specifying its own entrance expectations and requirements. Such a set of minimum competencies and knowledge would serve to guide the Regents and the secondary schools in further planning for the elementary and secondary curriculum.

State University declined to formulate such a set of expectations in its master plan, citing its mission as a public university system to provide broad access to higher education for citizens of the State. State University noted that it endeavors to serve graduates of all types of secondary curricula in the State—advanced placement, Regents track, general level, and occupational. Because of differences among campuses and curricula, State University believes that it is better to leave to each campus the judgment of preparedness to enter a particular course of postsecondary study. Campuses would retain this judgment, however, if a common set of minimum expectations were adopted. They would remain free, as they are now, to set requirements above the minimum or to waive the minimum expectations when they judge this to be the best course. For those who do not meet admission requirements, the University now offers opportunities to acquire the necessary preparation; it would continue to do so.

City University did not address this question directly in its 1984 master plan. The CUNY system does not specify courses or competencies which students must have to be admitted. However, as stated above, admission to the senior colleges requires students to have high school averages of 80 or above in academic courses or to be in the top third of their graduating class. Admission to the community colleges requires only a high school diploma or its equivalent. For all students who enter City University, the Freshman Skills Assessment Program provides a definition of the competencies in reading, writing, and mathematics needed for college-level work (see below).

Many independent institutions responded to this question in their 1984 master plans with specific recommended competencies; a number endorsed the recommendations of the College Board in its 1983 report, *Academic Preparation for College* (see below). For illustrative purposes, two independent institutions' responses on expectations of entering students are quoted here:

> High school diploma or GED; high school program including four units of English, three units of mathematics, two units of social studies, one unit of science, two units of foreign language, four electives. High school program should include the following: English—a variety of writing assignments; literature—exposure to various styles and themes; mathematics—algebraic and geometric concepts and deductive reasoning, intermediate algebra and trigonometry. Students should read at 12th grade level, should be able to write extended compositions, expository and analytical; should know research skills and be capable of literary criticism; should understand U.S. history, culture, and institutions, as well as such fundamental concepts as nationalism, culture, revolution, social stratification, and GNP; should have been exposed to non-American culture and history; should understand the scientific method and be familiar with fundamental concepts in biology, chemistry, and/or physics. (A four-year liberal-arts college of about 3,000 students.)
>
> Preparation should be improved in English, mathematics, science and computer basics in the secondary schools. (A specialized engineering-technical institution offering undergraduate and graduate degrees.)

The proprietary sector plan states: "Strengthening the basic requirements for a high school diploma should provide the performance level necessary for a postsecondary education in New York State." While cautioning that universal standards for admission are not recommended for such a diverse group of institutions, the plan states that most proprietary institutions require entering students to hold a diploma or the equivalent. Most of the institutions are said to agree that "a measurable competency in English and mathematics" is necessary equipment; a number recommend "instruction in reasoning, decision-making and logic."

In addition to the expectations expressed by the sectors and institutions, other guidelines exist, including the report *A Nation At Risk*, mentioned above, and the College Entrance Examination Board report, *Aca-*

demic Preparation for College: What Students Need to Know and Be Able to Do (1983). *A Nation at Risk* briefly outlined the competencies in each subject area which the recommended basic curriculum should provide. With regard to English, for example, it stated that high school graduates should be able to (a) comprehend, interpret, evaluate, and use what they read; (b) write well-organized, effective papers; (c) listen effectively and discuss ideas intelligently; and (d) know their literary heritage and its effects on their imagination, understanding, and culture. Similar statements of broad competencies were provided for mathematics, science, social studies, and computer science. The report included the following recommendation:

> Four-year colleges and universities should raise their admissions requirements and advise all potential applicants of the standards for admission in terms of specific courses required, performance in these areas, and levels of achievement on standardized achievement tests in each of the five Basics and, where applicable, foreign languages.

A more specific list of knowledge and competencies has been published by the College Board in *Academic Preparation for College*. This report was part of the College Board's ten-year Educational EQuality Project "to strengthen the academic quality of secondary education and to ensure equality of opportunity for post-secondary education for all students." The report listed six groups of basic academic competencies (reading, writing, speaking and listening, mathematics, reasoning, studying) and six basic academic subjects (English, the arts, mathematics, science, social studies, and foreign language) as essential preparation for college study. Under each basic area of competency and each subject, the report listed specific desired outcomes. For competency in reading, for example, one specified outcome was "The ability to identify and comprehend the main and subordinate ideas in a written work and to summarize the ideas in one's own words." A chapter on "Achieving the Outcomes" called for an extensive commitment and cooperative action by the schools, policy setters, and a concerned public, stressing that standards must not be imposed arbitrarily, without accompanying educational efforts designed "to enable more students to succeed."

In 1981, the academic senates of the three California public higher education segments (the University of California, The California State University and Colleges, and the California Community Colleges) together endorsed three related statements on preparation in English and mathematics. The first statement, "Competencies Expected of Entering Freshmen," formed the basis for the other two, "Remedial and Baccalaureate-Level Coursework" and "Admission Requirements." The competencies expected in English included 12 competencies in writing and six in reading; for mathematics the statement included 11 recommendations regarding mathematics courses and skills assessment, endorsement of ten recommendations made by the boards of the Mathematical Association of America and the National Council of Teachers of Mathematics, and specification of topics to be covered and skills to be developed in pre-high school and high school mathematics courses. The competencies for writing were similar to those specified by the College Board in *Academic Preparation for College*, including, for example, "The ability to construct a paragraph which develops and supports the paragraph's main idea with examples or reasons." The six reading competencies were the same as those specified by the College Board. The statement on admission requirements recommended that the California State University and Colleges adopt the University of California requirements of two years of mathematics and four years of English in high school.

The adoption of a common set of expectations by the faculty senates of California public institutions at three different levels is encouraging evidence that agreement is possible on this subject. Their combined statement, like similar statements in the two national reports, *A Nation at Risk* and *Academic Preparation for College*, gave the reason for such clear public agreement:

> The Academic Senates believe that specification of expected competencies, with clear communication of the nature of these requisite skills to all junior and senior high schools in the state, can be a significant factor in improving student preparation and educational opportunity for successful college and university study.

Communication of college entrance expectations to elementary and secondary schools should ideally be part of a larger communication effort, in the view of the New York College Learning Skills Association (NYCLSA). In a position paper prepared and submitted to the Department in April 1984, NYCLSA stated:

> Secondary schools and colleges must cooperate if students are to enter college with appropriate skill levels and attitudes and expectations about college. For too long, it seems, high schools have only considered the top students in a senior class as probable college attendees. In fact, at least fifty percent of most high schools' seniors go on to at least a two-year college. The students do not enter well-prepared; nor do they seem to understand the differences between high school

> and college study. Many of the first-semester college freshmen fail one or more courses. This is not due to intellectual inability in most cases, but is, rather, due to lack of self-direction and lack of ability to organize class and study time appropriately. . . .
>
> As part of the new Regents Action Plan, additional in-service days are planned for public school teachers. At the high school level, it would seem appropriate for developmental educators to be invited to participate in these sessions. . . . In all areas of articulation between high schools and colleges, the actual instructional members should be the people communicating. It is not enough for high school guidance counselors and admissions staffs from colleges to be in touch with one another.

The idea that colleagues from the postsecondary community should participate in in-service activities together with elementary and secondary school teachers (particularly the latter) is potentially a very useful one. By opening up further avenues of communication between educators at the two levels, such interchange could result in a more integrated experience for the approximately 65 percent of New York high school graduates who pursue further education soon after graduating. The State budget for 1984-85 provides funding for only one day of in-service training, rather than five as recommended in the Regents Action Plan. One day would not provide the scope needed for fruitful work on secondary-postsecondary articulation. However, the Legislature has also allocated funds for the planning and operation of "teacher resource and computer training centers" by school districts and/or BOCES. These centers are intended as long-term sites for purposes which are quite compatible with interaction with postsecondary faculty. In fact, the regulations adopted by the Regents to implement this legislation specify "linkages with institutions of higher education" as one criterion for evaluating school districts' applications to qualify for teacher resource center funding. This is an avenue which should be explored.

Despite reservations initially expressed in the sector master plans, broad agreement on minimal preparatory subject masteries and competencies appears to be a feasible goal for New York's postsecondary community. Minimal expectations might be those expressed by the Regents requirements for the local high school diploma, in terms of the newly developed courses of study for secondary school subjects and the Regents Competency Tests (RCT's; see below). All of the RCT's undergo periodic review with the possibility of revision, and several of them are being or will be upgraded. All the RCT's, however, are taken at one point or other prior to the 12th grade, in order to identify deficiencies requiring remediation before completion of high school.

Even when they are revised to test for higher skill levels, the RCT's will still be intended to identify students needing remediation well before their senior year of high school. For that reason, the Department does not believe the RCT's appropriately define minimum competencies to undertake college-level study. What is needed is agreement among the various parties as commonly acceptable definitions of appropriate preparedness are considered and gradually refined.

Such agreement would not mean that colleges would admit only students who demonstrate mastery of all the competencies. Returning adults and recent immigrants will still require remediation. Some high school graduates will continue to require remedial work; for many of them, college is the only practical setting. The alternatives to providing remedial work in college for such students are either setting up a new system (at considerable expense) or failing to provide it. The latter course would bar many early underachievers from academic success — and subsequent social contributions — which they could achieve, given the chance. Nor would such agreement preclude requirements above the minimum, where necessary.

Such agreement, communicated to students, parents, and the educational community at all levels, would, however, give direction to elementary and secondary schools, as well as colleges, as they jointly seek to improve the quality of education they provide.

II. Preparedness of New York High School Graduates

Judging by performance on State and national tests, large numbers of New York's high school graduates seem to be adequately prepared for college entrance. Regents examinations are taken by about half of all high school students, most of whom hope to attend college. All others take the Regents Competency Tests in reading, writing, and mathematics. Virtually all college applicants take the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board; many of them, but not all, take the Achievement Tests.

Regents Examinations

There are 22 Regents examinations in six subject areas: English, social studies, science, mathematics, languages, and business. In June 1983 almost one million such exams were taken, the largest numbers in mathematics (34 percent) and science (28 percent). Overall the passing rate was 81 percent; it was highest in languages (about 91 percent) and lowest in social studies (77 percent). These overall figures have not varied much in recent years.

Regents Competency Tests (RCT)

All students who do not take and pass the Regents Examinations in English and mathematics must take the Regents Competency Tests. This program was established in 1981 to (1) insure that all high school graduates have the basic reading, writing, and mathematical skills; and (2) identify, in a timely manner, those students who will require remedial instruction in order to graduate. In reading, the final test is given in 11th grade, and the student must demonstrate the ability to read at approximately that level. In writing, also an eleventh-grade test, the student must demonstrate the ability to organize and present ideas in a business letter, a report, and a persuasive composition. In mathematics most students take the test at the end of ninth grade. In 1983 the pass rate for reading was 92 percent, for writing 79 percent, and for mathematics 75 percent. A student who fails any Competency Test must receive remedial instruction at the secondary level.

Scholastic Aptitude Tests

There does not appear to be a single satisfactory explanation for the 20-year decline in national and New York State student scores on the SAT, both verbal and mathematical. New York has, however, held relatively steady around the national average over the past six years. In 1984, the average verbal score was 424 out of a possible 800 (U.S. 426), and the average math score was 470 (U.S. 471). In recent years about 140,000 New York State high school seniors expecting to attend college have taken the SAT; about 20 percent of these have taken at least one of the 14 achievement tests. This self-selected group does well on the achievement tests: in 1984 New York scores tended to be 16 points higher than the national average.

However, large numbers of students do not take Regents diplomas, or do not achieve above-average scores on tests like the SAT, but choose to pursue higher education. For whatever reason, the New York College Learning Skills Association's statement quoted earlier indicates that postsecondary institutions do not always find entering students well prepared. What programs and services do the State's postsecondary institutions now offer to provide access for such students? How are students identified for placement? What kinds of course are provided? What faculty and other resources are devoted to them? What evaluation measures are in place?

III. Role of Postsecondary Institutions in Serving the Underprepared Student

The discussion which follows will be clarified by an initial definition of terms. The field has not yet arrived at universally accepted definitions of some key terms. For purposes of this discussion, the following definitions will apply:

Developmental education is the general term assigned to academic activities in support of students who, because of inadequate secondary school preparation, have poor chances of success in college. These include learning centers; tutoring; remedial, developmental or supportive coursework; and counseling. Frequently all of these are combined in a prefreshman summer program.

Remedial courses concentrate on the skills necessary to begin college-level work. These may be discipline-related (e.g., basic mathematics) or skill-related (e.g., note-taking). Because all such work is precollegiate, remedial courses may carry no credit in New York State.

Developmental courses combine precollege and college-level instruction, with credit awarded for successful completion of the college-level material. Such courses frequently meet for a longer period of time than normal (e.g., English 101X, Introduction to Composition: five hours, three credits).

Compensatory courses usually are full-credit courses especially structured to be sensitive to the cultural and educational needs of a particular population. This term is no longer widely used.

Supportive courses usually exist alongside regular courses, in a workshop format, to reinforce material offered in the course (e.g., Mathematics, 100S, two-hour seminar, no credit, offered in conjunction with Mathematics 100, three hours, three credits).

Opportunity programs are comprehensive "packages" combining academic, personal, and financial support for students from disadvantaged backgrounds. In New York the publicly supported programs are the Higher Education Opportunity Program (HEOP) at the independent colleges, Educational Opportunity Program (EOP) at State University, Search for Equality and Elevation through Knowledge (SEEK) at the CUNY senior colleges, College Discovery (CD) at the CUNY community colleges (these four programs are State-supported), and the federally supported Special

Services for Disadvantaged Students program at a number of public and independent colleges. There also are numerous institutionally supported programs, and some which coordinate all three sources of support.

A. Placement

Most colleges have formal testing programs for the diagnosis and placement of students needing developmental education support. These programs are characterized by a variety of approaches.

The populations tested range from the entire incoming class, at some institutions, to students preliminarily identified as potentially weak through admission under the auspices of opportunity or other special programs. A number of institutions test transfer students, as well. In the winter of 1983-84, the State Education Department conducted a survey of remedial and developmental programs at 41 postsecondary institutions, selected to represent all sectors and institutional types. A total of 37 institutions responded. All the responding institutions conducted placement testing of some sort; 54 percent tested all entering freshmen for placement into remedial, developmental, or regular academic course work; 24 percent tested only full-time entering freshmen; 11 percent tested only opportunity program students; and 41 percent tested other populations, either in addition to or instead of any of the above (transfer students, students who apply for assessment).

The administrators of these tests are sometimes the faculty of several academic departments, sometimes the staff of a learning center or of an opportunity program. Their training ranges from psychometricians to counselors to regular faculty to graduate students.

The types of instruments most often tend to be commercially developed, "standardized" tests which may or may not be normed for the particular population being tested. The California Achievement Test series may be the single most popular instrument in use in this State. Additionally, some institutions use instruments which measure cognitive style attributes or personality characteristics such as motivation. A great many combine the use of standard instruments with in-house developed tests, most often a writing sample. Standardized tests mentioned by the institutions responding to the recent Department survey included the California Achievement Tests, ETS instruments, Nelson-Denny Reading Tests, the Test of Adult Basic Education, and the College Board Tests of Reading Comprehension and Written English Expression.

The uses to which test results are put vary. Sometimes they are used directively, to determine the level of coursework in various disciplines into which students are scheduled. At 76 percent of the institutions responding to the Department's survey, placement was mandatory depending on test scores; at 22 percent placement was recommended. The remainder of the institutions simply provided results to advisors as one factor in helping students to choose courses. Another use of results is the comparison of pre-test and post-test patterns in an attempt to determine the effectiveness of courses or programs.

Two system-wide testing programs

Two comprehensive system-wide programs of testing for placement in remedial and developmental courses deserve special attention here. These are in place at The City University of New York and in the New Jersey public higher education system.

The City University of New York has been heavily involved in remedial education for well over a decade. Over that period, CUNY's efforts to meet the needs of students entering under open admissions have become increasingly systematized. The Freshman Skills Assessment Program (FSAP) was instituted in the fall of 1978. Since that time, well over a quarter of a million students have been tested.

All students admitted take FSAP tests in three areas—writing, reading, and mathematics. While these tests are used for placement, not admission, they imply a system-wide minimum standard of skills necessary to begin college-level study. Students who cannot pass any or all of these tests are required to take basic skills courses. Students are not allowed to graduate from some CUNY community colleges, or advance to upper-division study, until they have passed all three tests. According to the City University's 1984 master plan, 68 percent of senior college freshmen and 84 percent of community college freshmen enroll in at least one basic skills course.

The CUNY Writing Skills Assessment Test is a 50-minute essay that is graded holistically on a scale from 1 to 6. A rating of 4 or better indicates that the essay meets the CUNY standard for "minimum readiness" for a college-level composition course. The mathematics test consists of 40 multiple-choice questions in arithmetic and algebra. The reading test consists of 45 multiple-choice questions based on a series of passages that students read. The test indicates how well students understand main ideas, understand direct statements, and draw inferences.

There is little information available on the results of this massive effort. A study of the June 1979 CUNY graduates showed that the rate of attrition is no higher for students required to take remedial courses than for other students. Individual campuses of City University responding to the Department's survey reported conducting a variety of evaluative efforts, including post-testing of students completing skills courses, reports by external evaluators, and follow-up studies on the retention and success of students after completing basic skills courses (sometimes in comparison with other populations of students). The results of these evaluations could not be reported in detail on the survey form.

New Jersey has the most comprehensive statewide basic skills assessment program in higher education in the United States. Since 1977, most freshmen entering the public colleges have taken the New Jersey College Basic Skills Placement Test (NJCBSPT). Ten independent colleges also administer the test to their students. The NJCBSPT consists of an essay and four multiple-choice sections: Reading Comprehension, Sentence Sense, Computation, and Elementary Algebra. The tests are roughly comparable, both in content and in level of skills measured, to the CUNY tests.

Statewide, 51,135 New Jersey students took the tests during the spring and summer of 1982. The test results divide students into three levels of proficiency categories: Lack Proficiency, Lack Proficiency in Some Areas, and Appear to be Proficient. A relatively small proportion of the entering students were able to demonstrate proficiency in the basic skills: 27 percent appeared to be proficient in verbal skills, 32 percent appeared to be proficient in computation, and 11 percent appeared to be proficient in elementary algebra. Large numbers of students required remediation before undertaking college-level work: 31 percent lacked proficiency in verbal skills, 46 percent lacked proficiency in computation, and 61 percent lacked proficiency in elementary algebra. The seriousness of the problem is underscored by the fact that, according to a report issued by the New Jersey Department of Higher Education, there has been no meaningful change in the proficiency level of the entering students in the five years that the testing program has been in place.

The New Jersey Department of Higher Education is working toward the goal of testing all full-time and part-time entering students and of requiring all students who need remediation to enroll in noncredit remedial classes before enrolling in credit-bearing classes. In the fall of 1981, 95 percent of the full-time and 76 percent of the part-time entering students were tested. More than 80 percent of the full-time students who were identified by the colleges as needing remediation were enrolled in remedial courses. The Department of Higher Education is also working toward agreement on the definitions of college-level work and the level of skills necessary for college-level work. At present, each college defines these matters for itself.

New Jersey has attempted to evaluate the success of its postsecondary remedial programs by post-testing and follow-up studies of students who did and did not complete remedial courses. The most recent report, "Effectiveness of Remedial Programs in New Jersey Public Colleges and Universities: Fall, 1982," shows that:

— Approximate passing rates in remedial courses for full-time students at the community colleges in the fall of 1982 were: reading, 70 percent; writing, 65 percent; computation, 60 percent; elementary algebra, 55 percent. At the state colleges, the passing rates were: reading, 86 percent; writing, 81 percent; computation and elementary algebra, 78 percent.

— Attrition rates for students completing remediation were lower than the attrition rates of students who did not complete remediation—and also lower than attrition rates for students who did *not* need remediation.

— Students who completed remediation attained about the same ratio of credits earned to credits attempted in the following semester as did students not identified as needing remediation—a consistently higher ratio than students who did not complete remediation.

— Students who completed a remedial course in reading, writing, computation, or elementary algebra earned consistently higher grade point averages (GPA's) in the following semester than students who did not complete remediation, although not as high as the GPA's of students who did not need remediation.

— Students who completed remedial courses showed statistically significant gains in mean scores from pre- to post-testing, although the gains for many students were still not large enough to bring them up to their college's level of proficiency.

— Students who completed remedial courses performed consistently better in subsequent courses in the same disciplines than non-completers, although they did not always achieve the pass rates of students who did not need remediation.

B. Remedial and Developmental Coursework at Postsecondary Institutions in New York State

Scope of the Offerings

Information in this section comes from the Department's survey of postsecondary institutions (referred to above). All of the 37 responding institutions reported that they offered remedial or developmental courses (33 had offered them for six or more years). Sixteen institutions offered remedial or developmental courses in all four basic skills areas (reading, writing/

composition, mathematics, and study skills); 14 institutions offered courses in three of the four areas.

The largest skill areas, in terms of course registrations, were mathematics (a total of 19,732 course registrations at 32 responding institutions in the fall of 1982) and writing/composition (17,481 course registrations at 32 institutions.) Thirty of the responding institutions reported offering coursework in remedial or developmental reading (with 11,073 course registrations); 18 institutions offered study skills courses (with 1,678 course registrations), and 22 institutions reported offering remedial or developmental courses in other areas (e.g., English as a Second Language).

For purposes of comparison, it is useful to estimate the total number of course registrations at these 37 colleges. Institutions report their full-time and part-time enrollments annually to the Department. In the fall of 1982, the 37 institutions reported enrolling 189,531 full-time and 87,561 part-time students. The number of course registrations may be estimated by multiplying the number in each category by an average course load of five courses for full-time and two for part-time students. Using this method, the total number of course registrations at the responding institutions was about 1.1 million in the fall of 1982. The total of 60,392 remedial and developmental course registrations reported on the survey is about 5.4 percent of this estimated overall total. Most (though not all) students who take remedial/developmental courses do so in their first year. In the fall of 1982, 84,939 full-time and 24,048 part-time freshmen were enrolled in the 37 institutions, according to Department records. The number of freshman course registrations may be estimated at about 472,791; the remedial and developmental course registrations reported on the survey amount to 12.8 percent of the estimated freshman course registrations for the fall of 1982. These figures must be interpreted with caution, since only about a fifth of the more than 200 degree-granting institutions were surveyed, and estimation was involved. Nevertheless, they are indicative of the scope of postsecondary remedial and developmental efforts.

Institutions were asked whether they were able to provide remedial or developmental coursework for all students identified as needing such assistance. Most responded that they were, adding such comments as: "Tutoring also provided free to all." However, five institutions indicated that they could not accommodate all students in need of remedial or developmental courses, expanding with comments such as: "Need more sections of Developmental Humanities, but funds are limited"; "No, if more formal and systematic means to identify students in need were employed." Two additional institutions indicated that they had difficulty in accommodating all students in need, one remarking that it did so, "but not at the appropriate class size," while the other noted that budget restraints frequently required postponing remedial course enrollment for some students.

Credit/Noncredit Status

In 1980, a revision of the standards for the registration of curricula in Commissioner's Regulations added the requirement that: "Credit toward an undergraduate degree shall be earned only for college level work." The revision had been made in response to rapid proliferation of remedial/developmental programs, many of which offered degree credit for basic skills instruction.

The Education Department monitors compliance with the Commissioner's Regulations largely by means of review visits in a five-to seven-year cycle. The system is one of peer review, in which the Department relies on the judgments of teams of academics from similar institutions.

From the spring of 1981 through the fall of 1983, 104 visits were conducted. Thirty of these found credit being offered for work judged to be subcollegiate. After each visit, a staff report listing specific credit-bearing courses that were wholly or in part remedial was sent to the institution for its response. The responses varied: some colleges agreed with the findings and stopped offering credit for the courses in question; some disagreed with the findings. In cases of disagreement, the Department sent outlines and other materials describing the courses in question to at least two consultants from comparable institutions. The consultants' reports were evaluated by the Department and incorporated into the final report, along with the institution's response. In nearly all cases, the determination letter that accompanied the final report requested a plan from the institution by which it would either raise the level of courses or offer less or no credit for them.

C. Other Services

The survey asked about ancillary services: prefreshman summer programs, tutoring, counseling, study skills program/workshops, and learning centers. Most institutions (23 of 37) offered all but the first of these services to all students. Seventeen offered a prefreshman summer program for opportunity-program students only; five offered such a program for all students identified as needing remedial or developmental work; and five made a prefreshman summer program (distinct from regular freshman orientation) available to all students.

D. Faculty

Institutions were asked about faculty involvement in remedial/developmental education; 31 responded to all or part of this section of the survey. These included campuses of State University and independent and proprietary institutions; City University did not provide quantitative information on faculty and staff. Twenty-four institutions provided data on the number of full-time equivalent (FTE) administrators devoted to remedial or developmental programs or coursework in the fall of 1982; the total was 45.5 FTE. Twenty-seven institutions reported 230.6 FTE instructional staff devoted to remedial/developmental education, about 2.2 percent of the total of 10,427 FTE faculty reported to the Department by these institutions in the fall of 1982. Institutions were asked to indicate the number of faculty who taught both in regular academic programs and in remedial/developmental education. The 31 respondents reported 181 full-time and 140 part-time faculty in this category, representing 1.8 percent of the 10,291 full-time faculty reported in the fall of 1982, and 1.9 percent of the 7,306 part-time faculty.

Thirty-two percent of administrators and 7 percent of instructional staff in remedial/developmental programs were reported to be supported by "soft money" (funds from noninstitutional sources subject to periodic renewal). The survey also sought data on faculty in-service training, required credentials, and tenure status. Institutions responding indicated either no provision for in-service training, or informal methods such as meetings or seminars. Credentials were often described as the same as those required of all new faculty members in the academic department corresponding to the instructor's skill area. Twenty-two institutions responded regarding tenure status; 19 replied that remedial/developmental faculty had the same opportunity for tenure and advancement as other faculty. Several of these stated, however, that instructors who were employed by the institution's Learning Center or Development Center were not eligible for tenure. At two institutions, remedial/developmental faculty were not eligible for tenure; one of these reported they they did, however, have faculty rank and were eligible for merit pay. One institution stated that it had "no policy specific to this area."

To generalize from the survey data, it would appear that a small, but significant, proportion of faculty is involved in remedial/developmental education, with about half of these devoted exclusively to this area. Opportunities for professional growth through in-service training are relatively informal. Opportunities for tenured status or other professional reward and advancement tend to be the same as for regular faculty when instructors are in academic departments, but more limited for those in learning centers.

Developmental education has become a recognized field in postsecondary education, with more practitioners than many established disciplines (or subdisciplines), yet new enough so that, unlike these more established fields, there is not yet consensus on appropriate credentials, good practice, or recognition of effectiveness. Moreover, for some practitioners, developmental education is a part-time assignment; for others, it is full-time (often in a mixed mode of classroom instruction, individual or small-group tutoring, administration, or coordination of a peer tutoring program or a learning center).

Faculty consistently report that developmental instruction is one of the most demanding of all assignments, requiring thorough preparation and the best teaching, but that it is also one of the most rewarding. At present, however, few formal opportunities exist for learning developmental educational techniques during traditional graduate training in the academic disciplines (although in-service training institutes for practitioners exist). Thorough knowledge of subject matter is obviously necessary. Yet the terminal degree in an academic discipline may be less important than familiarity with the growing body of literature in the field and experience in teaching disadvantaged students. Administrative training appears useful for many developmental educators. Thus, agreement on the most appropriate credential remains elusive.

As developmental education has come to constitute a significant percentage of all undergraduate instruction, it will come under review of government agencies and voluntary accrediting associations. There is a need to move toward consensus on standards of good practice in this field. Perhaps measurable outcomes, rather than ongoing processes, should receive primary attention in any review process. Similarly, recognized services are associated with effective developmental education programs: learning centers, tutoring systems, specialized counseling, testing, computer-assisted instruction. Consensus is in fact emerging as to what constitutes quality in each of these areas, which ultimately may become incorporated into standards of good practice.

Finally, institutions must evaluate and should reward instructional personnel in the developmental education areas. With its heavy emphasis on instruction as opposed to research and publishing, this field may disadvantage its practitioners if they are to be judged by conventional academic faculty evaluation standards. Perhaps a new status needs to be developed for persons in this area which recognizes its special requirements, encourages affiliation with academic departments, and provides alternative procedures for evaluation and rewards.

E. Expenditures

Thirty-one institutions reported total expenditures of $9.2 million for remedial/developmental programs in 1982-83. (City University did not provide data on expenditures or sources of funds.) About half of the total went for instructors' salaries and fringe benefits; the remainder was expended for tutors, counselors, clerical staff and aides; training of personnel; materials and equipment; and miscellaneous purposes.

Twenty-nine institutions were able to break out funds expended by source. About 37 percent of the funds were institutional; about 48 percent came from State funds; and the remainder came from Federal and local governments and foundation grants. Data on institutions' total expenditures for 1982-83 are not available from Department records; however, to put the figures above into approximate perspective, the 31 institutions which together expended $9.2 million on remedial/developmental education in 1982-83 reported total educational and general expenditures of $1.6 billion in 1981-82.*

Thus, the survey administered to a sample of colleges and universities in the State substantiates the impression that remedial and developmental education represents a significant effort at postsecondary institutions. At the institutions surveyed, it accounted for about 5.4 percent of course registrations, 2.2 percent of the FTE faculty (excluding CUNY), and expenditures of $9.2 million (excluding CUNY) in the fall of 1982. Since City University reports in its 1984 master plan that a majority of its freshmen (68 percent in the senior colleges and 84 percent in the community colleges) enroll in at least one basic skills course, these figures on faculty and expenditures would undoubtedly be higher if it had been possible to include CUNY.

F. A Wider Perspective: Two Reports

Two recent reports help to provide a wider perspective within which to consider these results. In the spring of 1981, the Office of Academic Affairs of The City University of New York surveyed the approximately 2,800 postsecondary institutions in the United States which admit first-year undergraduate students. The survey sought information about general characteristics of the freshman class (size, race/ethnic composition, age profile, resident/commuter); assessment of basic skills levels of entering freshmen; course offerings in the basic skills areas of reading, basic writing, basic mathematics, and any other areas identified by the institution; exit criteria for remedial courses; and the institution's judgment as to the most effective way to help students with skills deficiencies to maintain good academic standing. Forty-five percent (1,269) of the institutions responded. In a report of September 1983, the Instructional Resource Center of City University's Office of Academic Affairs summed up these nationwide results as follows:

- A full 85% of the responding institutions perceive poor academic preparation of incoming freshmen to be either very much of a problem or somewhat of a problem. Only 3% of the institutions do not perceive poor academic preparation to be a problem.
- A substantial percentage of entering freshmen are viewed as requiring assistance in the basic skills areas—28% in reading, 31% in basic writing, and 32% in basic mathematics.
- 97% of the responding institutions assess the skills levels of entering freshmen, and only 2% of the institutions feel that assessment is unnecessary.
- The overwhelming majority of institutions offer courses in the basic skills areas. More than eight out of ten of the institutions offer reading and basic mathematics courses; more than nine out of ten institutions offer basic writing courses.
- While tests are the most common method for placement into basic skills courses, there is little agreement on specific tests. The most common method of placement into basic writing and basic mathematics courses is through locally developed tests.
- Although institutions use tests to assess skills levels of students and to place them in courses, in the vast majority of institutions, decisions concerning exit from basic skills courses are left to the academic judgment of individual faculty members. ("Assessment and Improvement of the Academic Skills of Entering Freshmen Students: A National Survey," p. 1).

The survey by City University sought information only about underprepared students and basic skills courses. A more comprehensive recent study was the January 1983 report by the California Postsecondary Education Commission, "Promises to Keep: Remedial

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* E&G expenditures minus E&G mandatory transfers, since expenditures for items comparable to mandatory transfers were not requested in the survey.

Education in California's Public Colleges and Universities." This report was based on a survey of all campuses of California's extensive public university, four-year college, and community college systems or "segments." Results were reported on numbers of courses, sections, and enrollments in remedial reading, writing, mathematics, and English as a Second Language; special programs and remedial support services; evaluation of remediation; costs and sources of funds.

The results may be summarized as follows:

- At the eight general campuses of the University of California, in 1980-81, 22.7 percent of all sections of English offered and 15.3 percent of enrollment in English were in remedial reading and writing. Remedial mathematics accounted for 8.6 percent of all mathematics sections and 8.9 percent of enrollment in mathematics. In that year the University spent an estimated $6.6 million in remedial courses (including English as a Second Language) and support services. This represents a 17 percent increase over 1979-80 and a 40 percent increase over 1978-79. Over the three years, these expenditures accounted for approximately 0.4 percent of the University's total budget. Of the $6.6 million total, 53.6 percent was for courses and 46.4 percent was for remedial support services.
- At the 19 campuses of The California State University (the system of four-year colleges), remedial reading and writing accounted for 11.9 percent of all sections of English offered in 1980-81 and 10.3 percent of all English enrollment. In mathematics, 10.7 percent of all sections and 14.5 percent of all enrollment were remedial. In 1980-81 the State University system spent an estimated $9.3 million on remedial courses and support services, which was a 59.4 percent increase over 1979-80 and a 96.9 percent increase from 1978-79. Total remediation expenditures went from 0.66 percent of the State University system's total budget in 1978-79 to 1.01 percent of the total budget in 1980-81. Of the $9.3 million total, 76 percent was for remedial courses and 24 percent was for support services.
- At the 101 California community colleges responding to the Commission's survey, about 45 percent of all English sections and enrollment were in remedial reading and writing in 1980-81. Remedial mathematics accounted for 54.4 percent of all sections of mathematics and 57 percent of mathematics enrollments. In 1980-81, the California community colleges spent an estimated $66.3 million on remedial courses and support services for their students—17.7 percent more than in 1979-80 and 36.6 percent more than in 1978-79. Of the $66.3 million total, 79.5 percent was for remedial courses and 20.5 percent was for support services.

Evaluation of remedial efforts was found to be inconsistent within and among the three systems, ranging from tallies of program utilization to sophisticated long-range research on grades and persistence.

Recommendations of the report include:

- That remedial activities be reduced over a five-year period at the University of California and The California State University, and that the community colleges continue to be considered the primary postsecondary provider of remedial courses and services.
- That the University and the State University explore cooperative arrangements with community colleges and adult schools to provide remediation.
- That the University, the State University, and the community colleges assist the high schools in defining the standards for college-preparatory courses and in providing staff development for secondary teachers.
- That the University and the State University continue to provide entry-level diagnostic testing in the basic skills and report the results to local boards of education, the State Department of Education, and the California Postsecondary Education Commission.
- That an "academic floor" be established below which the community colleges would not offer instruction, redirecting students below this level to an adult basic education program operated by either the local community college or a school district.
- That all community college districts establish comprehensive assessment/placement, advising, and follow-up programs to ensure adequate progress of remedial students.
- That credit toward a baccalaureate degree not be granted for remedial reading, writing, and mathematics courses, but rather "workload credit" be awarded which would not affect the level of State funding for remedial courses at the University and the State University as they reduce their remedial efforts. The Commission made no recommendation about the granting of credit for remedial courses toward an associate degree, except to recommend that community college districts examine the matter.

— That all three state postsecondary segments establish systematic and comparable procedures for evaluating remedial courses and services.

Thus, four surveys conducted within the past two years demonstrate that remediation efforts are substantial, not only in New York State, but elsewhere in the Nation. The City University survey of undergraduate institutions nationwide showed that 97 percent of those responding assess entering freshmen's skill levels. An average of 28 percent were reported to require assistance in basic reading, 31 percent in basic writing, and 32 percent in basic mathematics. The New Jersey College Basic Skills Program found that at that state's public colleges in 1982, only 27 percent of entering students appeared to be *proficient* in verbal skills, 32 percent in basic computation, and 11 percent in elementary algebra; the large majority needed some remediation. The California Postsecondary Education Commission 1982 survey of the California public postsecondary systems showed the following:

Segment	**1980-81 Percent of:** Total Engl. enrollment in remedial reading/writing	Total math enrollment in remedial mathematics
U. of California	15	9
Calif State Colleges	10	15
Community Colleges	45	57

Finally, the State Education Department's sample survey of 37 New York postsecondary institutions showed that 78 percent tested the basic skills of full-time entering freshmen. Over five percent of estimated 1982-83 course registrations (nearly 13 percent of freshman course registrations) at the 37 institutions were remedial or developmental.

In view of the resource commitment represented by remedial/developmental education, institutions should examine closely whether the costs of such instruction are balanced by the financial resources it generates (tuition revenue from students who would otherwise not have attended the institution, part of the opportunity program budgets, funds from STAP, formula funding at public colleges, College Work Study Program funds in support of tutoring), or whether funds are being disproportionately drained from other institutional uses. Such studies should take several factors into account. Use of computers, and other technological-aided instruction, may ultimately prove effective in driving costs down; this area is relatively unexplored. Program evaluation may reveal significantly higher retention rates among students who complete remediation, compared with students identified as needing remediation who do not complete it. If so, institutions might regard the tuition and fees subsequently generated by the additional retained students as indirectly offsetting program costs.

The New York College Learning Skills Association, in its position paper, offers the following observations with regard to the effective use of resources in remedial/developmental programs:

> When a compensator program [i.e., an opportunity program as defined above]is located at a four-year campus, any remedial instruction required for the students enrolled in that program should be provided through the regular developmental education unit. Remedial courses, i.e., non-credit courses, would be counted for full-time enrollment and the tuition costs should be covered under STAP or the TAP five-year program. The remediation should not be provided by compensatory program personnel, as this decreases the effectiveness of mainstreaming students, is less well-accepted by traditional faculty, and frequently produces false perceptions of what the student must learn to become a fully functioning member of the student body. A good developmental program should have established standards for master of material leading to regular freshman courses, and should employ qualified instructors. To provide remedial courses through compensatory programs would create a duplicate effort on a campus, increase overall costs, and be a possible cause of a difference in campus academic standards expected of remedial students. One program on a campus, for instruction, is recommended to the Board of Regents and the New York State Education Department.

The structure of opportunity programs and the delivery of remedial courses vary with the diversity of institutions. It seems a good idea to avoid duplication between opportunity programs and remedial/developmental courses for nonopportunity program students. This recommendation deserves further study.

The Educational Opportunity Centers (EOC's) of State University may be capable of closer integration with remedial/developmental education statewide. By statute their purpose is to assist educationally and economically disadvantaged students in need of a high school diploma, basic education, developmental (i.e., remedial) education for college preparation, or occupational training, to attain a job and/or placement in institutions of higher education. EOC's are located in Buffalo, Rochester, Syracuse, the Capital District, Westchester, Manhattan, Brooklyn, and Farmingdale;

there is a similar, but smaller, Counseling Outreach Center in Schenectady. In 1981-1982, the EOC's reported serving nearly 14,000 students; college enrollment was the reported outcome for 5 percent. While there appears to be more than enough work for all providers, the services provided by EOC's and by colleges in the same regions should be examined and coordinated to avoid duplication and ensure articulation.

Finally, colleges and universities in all sectors now have remedial/developmental programs. These have grown campus by campus and, through experience, each campus has adapted its own programs to meet the particular needs of its students. As results of the Regents Action Plan are felt, the need for remedial/developmental education is expected to decrease. Timely consideration is needed to ensure provision of sufficient services now, while maintaining flexibility to redirect resources in the event the need decreases.

G. Evaluation

As the report of the California Postsecondary Education Commission indicates, evaluation of remedial efforts remains an area in which data are hard to come by and methods vary. Yet in theory, evaluation by outcome measures is uniquely feasible for remedial/developmental education. These efforts teach well-defined skills; therefore, both the exit skill level and the students' persistence and success through college should provide measures of success.

Existing Measures

The best available measure of success in remedial courses is completions compared to the number initially enrolled. SEEK, CD, and HEOP report this information. In 1980-81 in these programs there were 27,998 enrollments in remedial, developmental, and supportive courses and 16,352 completions (58.4 percent).

Another measure of success is pre-and post-testing. Thirteen of the surveyed institutions reported conducting pre- and post-tests; results are not available. A better measure would be the rate at which students who completed remedial/developmental courses also completed the next level of coursework, demonstrating that the instruction had in fact remedied their academic weaknesses. Five of the 31 institutions responding to this part of the survey indicated that they perform, or are planning to begin, this kind of follow-up study.

Still another measure is provided by data on recipients of aid through the State's Supplemental Tuition Assistance Program (STAP), which provides to the educationally disadvantaged up to one year of tuition assistance in addition to that from the Tuition Assistance Program (TAP). Students receiving STAP must meet the criteria for educational disadvantage used by the opportunity program of the sector in which they are enrolled, and must be enrolled for remedial coursework amounting to at least one-half of a minimum full-time load. In its first year of operation (1981-82) STAP awarded $9.4 million to 17,800 certified-eligible students. Indicators of program success are a rate of "survival" to the spring 1982 semester of 83 percent, only one percent below that for all first-time TAP and STAP recipients, and the "graduation" of 51 percent of the fall 1981 STAP recipients to non-disadvantaged status by spring 1982 (i.e., they then began to receive TAP rather than STAP). Since a student receiving TAP may continue to enroll in some remedial courses, changing from STAP to TAP does not necessarily signal the end of remediation needs. It does indicate confidence that those needs can be managed within a regular curriculum, however, since the student could have continued to receive STAP for the entire first year. (For students receiving TAP, academic progress requirements eventually limit the amount of remedial work that may be taken.)

Evaluation efforts vary widely. Evaluation of remedial/developmental programs is essential, however, to assure students of quality in the education they receive, to provide institutions with bases for comparison and models for change, and to assure that the public funds which support remedial/developmental education are well spent.

Possible evaluation measures include the customary process measures such as faculty qualifications, faculty/student ratios, classroom observations, and student evaluation. In addition, remedial/developmental education lends itself to evaluation by outcome measures: passing rates in remedial courses, attrition rates, results of pre- and post-testing, grade point averages and performance in subsequent college-level work, ratio of credits earned to credits attempted, and eventual graduation rates of students who complete remedial courses.

The extent to which evaluation should remain at the institutional level, the appropriate roles of the sectors, the Education Department, and the Middle States Association of Colleges and Schools, remain to be answered. During the 1984-88 planning period, systematic discussion among the institutions, the sectors, and the Department will be undertaken in order to answer these questions.

Appendix D

ENROLLMENT PROJECTION METHODS AND ASSUMPTIONS

Technical Notes and Supplementary Information

The enrollment projections included in this 1984 Statewide Plan are essentially "status quo" projections. That is, they are based on the assumption that recent patterns of college participation by different population subgroups will continue in the future. Institutional initiatives and important economic and social changes that would alter participation patterns are not accounted for in the projections. As a result, the projections reflect primarily the impact of anticipated demographic changes in the population.

In addition to these global influences, the changing age composition of the population, changing program interests of students, and large declines expected for the traditional college-age group are also expected to lead to changes in the enrollment shares of some institutions. These changes are incorporated into the projection model indirectly using indicators of relative drawing power based on admissions statistics and recent enrollment trends at the individual institutions. Institutions with low acceptance rates are projected to be able to soften the effects of declining numbers of high school graduates because of their relatively strong competitive positions.

The following sections summarize the methods used in the projection model, the general assumptions, and the impact of recent changes made to the methods and assumptions.

The Projection Methodology

The enrollment projections are developed in three major stages. First, regional enrollment totals are calculated based on projected population groups by age and their respective college participation rates. These regional totals are then allocated to the individual institutions based on their historical enrollment shares. For full-time undergraduates these institutional numbers are first-time students which are translated into total full-time undergraduates using a student flow type model. Finally, statewide, sector, and other totals are calculated by aggregating the figures for the appropriate institutions. This procedure is carried out separately for the four major types of students: full-time undergraduates, part-time undergraduates, full-time graduate students, and part-time graduate students.

In the model, calculations are done for each of the eight Regents regions in the State and for out-of-state areas, which are treated as a ninth region. Six age groups are used for each region — four for full-time undergraduates — to permit the model to reflect accurately the effect of the changing age distributions and the different participation rates of the age groups. The result is age-based groups of students from each region who are expected to enroll in college in New York State.

The distribution of students to individual institutions is based on projected shares of each age group in each regional pool that will attend each institution. These projected shares are based on a one-year trend of actual historical shares. The institutional enrollment projection for each type of enrollment (except full-time undergraduates) is obtained by summing the numbers of students received from each age-region pool.

In the case of full-time undergraduates, the summation provides entering full-time, first-time students for the institution. These are then translated into totals for full-time undergraduates by applying historical progression and transfer rates to this information in a student flow type model.

When the sector, institutional type, and statewide projections are obtained by summing the appropriate institutional projections, these aggregated projections benefit from having considered certain institution-specific details. The aggregation process also tends to cancel out errors for individual institutions created by imperfect knowledge of factors influencing institutional enrollments (e.g., competition among colleges, management quality). Thus, the more institutions included in an aggregation, the more confidence can be placed in the projections.

The projected enrollment shares, progression rates, and transfer rates used in the model are institution-specific, but only one variable in the model is adjusted or set specifically for each institution to override the historical rates. This variable, referred to as the drawing power category, is used only for the full-time undergraduate projections. An institution is classified in draw category 1, 2, 3, or 4 based on its historical acceptance ratio. (City University institutions are classified according to first-choice applications data from the

CUNY central admissions system.) This feature of the model works as follows: when a pool of potential students is projected to decline substantially, category 1 institutions are allocated declines at one-third the rate of the decline for that pool. Category 2 institutions are allocated declines at three-fourths the rate of the pool decline. Category 3 institutions decline at the rate of the pool decline. Category 4 institutions are allocated students from those remaining in the pool after the first three categories have been allocated their shares, based on their historical enrollment shares.

The current model uses one-year trends for all student flow variables. One set of these variables for the full-time undergraduate model, the high school graduate participation rate, was adjusted downward by 1.5 percentage points by 1994. This adjustment reflects the increasing proportions of minorities in the high school graduate pools, which are expected to reduce slightly the overall participation and retention rates in the State.

The drawing power classification is the only assumption in the model which alters historical institutional enrollment shares. It is not feasible to make any specific assumptions about an institution's future acceptance ratio, other competitive activities, or competitors' activities. The result is that (except as affected by drawing power class) each institution's overall competitive position or enrollment share remains the same in the model over the entire time horizon for the projections.

Assumptions for the 1984 Projections

The assumptions and procedures used in preparing the 1984 projections are essentially the same as those in the 1982 and 1983 projections. Most of the historical enrollment and admissions data have been updated to include the fall of 1983. The only enrollment data that could not be updated were the proportions of transfers entering at lower division or upper division levels, and 1982 data were used instead. New high school graduate and population projections developed in 1983 have also been used in the model.

The explicit and implicit assumptions applied in using these data to project enrollments are specified in Figure A. Two technical modifications to the methods and assumptions were implemented for these projections. The first involves the use of one-year trends rather than weighted averages for the various projected rates used in the model. The second is the respecification of drawing power categories and allocation rules used in projecting full-time, first-time students. Additional details about these changes are provided below.

One-year trends were used as the projected values for participation rates, student residence and migration data (used to calculate enrollment shares), and flow ratios. The trends replaced the weighted averages used in earlier versions of the model, except where trend values appeared to be unrealistically large. As noted above, the assumption of a 1.5 percentage point drop in the regional participation rates by 1994 was continued, because the participation rates of minorities continue to be low relative to the ratio for whites. A similar drop previously assumed in projected transition ratios was removed due to significant increases in these transition rates in recent years.

The shift to trends rather than weighted averages is expected to improve the accuracy of short-range projections. In general a trend procedure will perform well except during a period of change which produces an inflection point in the rate curve. For the long range, there is no evidence that either trend or weighted average values is superior, even though the results may be significantly different because of the sensitivity of the projections to small changes in the rates and in base starting enrollment levels.

A small drop in flow rates (i.e., continuing students) had been assumed previously for much the same reason. However, recent increases in these rates appear to be related to relatively stable and permanent changes in retention patterns. This appears to be caused by continuing efforts by colleges to develop programs to improve retention, as well as a trend toward students taking longer to complete programs for a variety of reasons, including higher credit requirements for programs and more remedial support.

These changes in the model generally benefit those institutions which have fared well lately in terms of retention and enrollments, such as the community colleges. Conversely, using trends is disadvantageous to institutions that have fared poorly in these areas.

The number of *drawing power classifications* used in the model for full-time, first-time students was increased from three to four, and out-of-state students have been allocated through the drawing power procedures for the first time in 1984. Community colleges were moved from the low draw category in the 1983 model to category 3 in the 1984 model. This means that they decline at the rate of the pool declines in the 1984 model rather than much faster, as in previous versions of the model. In addition, institutions with acceptance ratios between 60 percent and 70 percent were combined and treated the same way as the community colleges. In the past, all institutions with acceptance ratios above 65 percent were classified lower draw.

This revision of the drawing power classification was designed to deal with two concerns. The first is that for the past several years community college enrollments have been consistently higher than projected by the Education Department, a pattern that appears to reflect a number of enduring influences. The second concern was related to the extremely wide range of colleges being grouped together as low draw in 1983 and earlier. By including all institutions with acceptance ratios of 65 percent or higher, an institution with a 68 percent acceptance ratio was being treated the same as one with a 95 percent acceptance ratio, and much less favorably than one with a 64 percent acceptance ratio. The additional category helps to soften the differences among institutions near the boundaries.

The most notable consequence of these changes are higher projections for the community colleges and a few other institutions (mostly independent) that had formerly been classified as low draw. Selective institutions with substantial numbers of out-of-state students also have higher projections. On the other side, by projecting higher enrollments for the community colleges and other institutions that were moved up to category 3, the pools of potential students remaining to be shared by the low draw institutions were smaller and the enrollments of the category 4 institutions decline more than in earlier projections. Most of the low draw institutions in the current model are in the independent sector, since most of the institutions with high acceptance ratios are independent.

Figure A

PROJECTION ASSUMPTIONS FOR 1984 UNDERGRADUATE AND GRADUATE ENROLLMENT

FACTOR	ASSUMPTION
	Explicit
Population	Commerce Department projections released spring of 1983.
High School Graduates	1983 projections based on recent grade progression ratios. No adjustments were made related to expected shifts in race/ethnic composition or interstate migration.
Participation Patterns	One-year projected trends in regional rates assumed for all future years. For full-time, first-time enrollments, a 1.5 percentage point drop in the mean regional rates by 1994 was assumed to reflect the changing race/ethnic composition of secondary enrollments and high school graduates.
Distribution Patterns	One-year projected trend in regional residence and migration assumed as the base for the one year projection. Thereafter, the previous year's projection serves as the current projection year starting point. For full-time undergraduates, 4 institutional drawing power categories were used based on 1981, 1982, and 1983 data. 1) Acceptance ratio 45% or less 2) Acceptance ratio 45-60% and proprietary institutions 3) Acceptance ratio 60-70% and community colleges 4) All other institutions If a pool of students is stable or rising, all institutions receive their historical share of the pool as defined by the one year trend levels. If a pool of students declines by less than 3% in any year, category 1 institutions maintain their enrollment level, category 2 institutions decline by .25 the rate of the pool decline, and category 3 by .75 the rate of pool decline. If a pool declines by more than 3%, category 1 institutions decline by .33 the rate of the pool decline, category 2 institutions decline by .75 the rate of the pool decline, and category 3 institutions decline at the same rate as the pool declines. Category 4 institutions receive their historical share of the remaining pool.

Figure A continued

FACTOR	ASSUMPTION
Transfers in Year K	Projected to follow the same curve as lower division enrollments in year K-1.
Sophomore Transition	One-year projected trend in institutional ratio assumed for all future years.
Upper-Division Transition	One-year projected trend in institutional ratio assumed for all future years.
	Implicit
Governmental Initiatives	No substantial changes assumed in: a) Student Aid b) Institutional Appropriations c) Institutional Capacity or Distribution d) Regulatory Constraints
Institutional Initiatives	No substantial changes assumed in: a) Retention Programs b) Program Offerings c) Student Recruitment/Advertising d) Cost of Attendance
Societal Conditions	No substantial changes assumed in: a) Job markets/return on a college education b) Family ability to pay c) Desire for education d) Educational attainment of parents e) Rate of personal/social conflict f) Academic preparation and ability g) Rate of demand for military personnel

Source: NYSED, Bureau of Postsecondary Research, Information Systems, and Institutional Aid, 1984.

Appendix E

ADDITIONAL FINANCE AND FACILITIES DATA

Table 1
STATE SUPPORT FOR POSTSECONDARY EDUCATION*
($ MILLIONS)

	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83
SUNY State-Operated (1)	$ 692	$ 788	$ 870	$ 875	$ 997	$1,103
CUNY Senior (2)	194	209	234	294	392	451
Community Colleges - SUNY & CUNY (3)	154	176	193	197	224	235
(SUNY CC)	100	117	127	131	147	155
(CUNY CC)	55	59	66	66	77	80
Aid to Independent Institutions	88	91	90	115	118	124
Bundy Aid	66	66	69	92	93	96
Other (4)	22	25	22	22	25	28
Student Aid	234	245	267	269	298	329
TAP	207	225	248	251	279	302
All Other (5)	27	19	19	17	19	28
State Educ. Dept. (6)	10	12	20	14	16	17
Other State Agencies	9	8	7	7	8	9
TOTAL HIGHER EDUCATION:	1,381	1,530	1,681	1,770	2,053	2,269
Total NYS Revenues	$10,896	$11,555	$12,765	$13,966	$15,856	$16,645
State Support to Higher Education as a Percent of Total State Revenues	12.7%	13.2%	13.2%	12.7%	12.9%	13.6%

* Appropriation data have been used where expenditure data are unavailable.

1. Includes all SUNY units except community colleges.
2. Data reflect State takeover of CUNY senior colleges during this period; includes debt service.
3. Includes both SUNY and CUNY community colleges; includes debt service.
4. Medical/Dental Capitation, HEOP (admin.).
5. Regents Scholarships & Fellowships, State Guaranteed Student Loans.
6. Einstein-Schweitzer Chairs, Education of Native Americans, Medical/Dental.

NOTE: This tables corresponds to Table 31 in the body of this Statewide Plan.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 2

STATE FUNDS TO POSTSECONDARY EDUCATION
STUDENT AID AND INSTITUTIONAL AID BY SECTOR (1)
1978-79 TO 1982-83
($ MILLIONS)

	1978-79	1979-80	1980-81	1981-82	1982-83
Student Aid (2)					
SUNY State-Operated	$ 56.2	$ 59.9	$ 59.4	$ 66.4	$ 65.4
CUNY Senior Colleges	39.7	41.1	37.0	41.2	44.7
Community Colleges	42.5	48.1	44.0	46.1	48.8
SUNY CC	18.4	20.5	22.7	25.5	26.6
CUNY CC	24.1	27.6	21.4	20.5	22.2
Independent	119.1	129.0	131.5	143.1	174.3
Proprietary & Other (3)	19.6	22.3	27.7	40.3	55.8
TOTAL	$ 277.1	$ 300.5	$ 299.6	$ 337.0	$ 362.0
Institutional Aid (4)					
SUNY State-Operated	$ 770.2	$ 851.7	$ 856.1	$ 977.5	$1,083.0
CUNY Senior Colleges (5)	201.5	225.5	290.0	382.1	439.7
Community Colleges	172.7				233.6
SUNY CC	116.6	126.1	130.0	146.6	154.5
CUNY CC	56.1	63.7	63.2	74.5	79.1
Independent	86.5	86.3	110.5	111.8	117.4
Proprietary & Other (3)	--	--	--	--	--
TOTAL	$1,230.9	$1,353.3	$1,449.8	$1,692.5	$1,873.8

1. See Fiscal Glossary in the body of this Statewide Plan for explanation of definitions and methods.
2. Student Aid represents all identifiable State funds for student aid, whether paid directly to students or channelled through the institution.
3. Includes non-degree-granting institutions.
4. Includes debt service for CUNY senior and community colleges as well as SUNY community colleges.
5. Data reflect State takeover of CUNY senior colleges during this period.

NOTE: Figures will not match Table 1 since funds for State agencies and State Guaranteed Student Loans are excluded. This table corresponds to Table 32 in the body of this Statewide Plan.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 3

UNRESTRICTED REVENUE FROM EACH REVENUE SOURCE BY SECTOR
FISCAL YEAR ENDING 1979 AND 1983 (1)
($ MILLIONS)

	NEW YORK STATE		SUNY State-Operated		CUNY Senior (2,3)		Combined CC (3,4)		Independent		Proprietary	
	1979	1983	1979	1983	1979	1983	1979	1983	1979	1983	1979	1983
Tuition & Fees	$1,518	$2,396	$ 155	$ 212	$103	$125	$117	$184	$1,104	$1,806	$39	$70
Federal Appropriations	19	18	8	14	0	0	1	0	10	3	0	0
State Appropriations	1,224	1,812	767	1,021	203	446	175	230	79	115	0	0
Local Appropriations	231	227	0	0	89	21	142	206	0	1	0	0
Federal Grants & Contracts	94	148	0	4	3	4	1	2	90	139	0	0
State Grants & Contracts	9	7	0	1	6	1	0	1	3	3	0	0
Local Grants & Contracts	9	11	0	0	0	1	2	1	6	9	0	0
Private Gifts & Contracts	88	195	0	3	0	1	0	1	88	191	0	0
Endowment Income	89	143	0	1	0	0	0	0	89	141	0	0
Educational Activities	45	70	9	12	1	0	1	1	33	57	0	1
Auxiliary Enterprises	365	567	90	142	1	2	6	12	266	407	2	3
Hospital	280	459	64	162	0	0	0	0	216	297	0	0
Other	137	239	28	39	1	3	17	35	88	161	2	1
Independent Operations	36	77	0	0	0	0	0	1	35	76	0	0
TOTAL (5)	$4,142	$6,368	$1,122	$1,611	$407	$603	$462	$671	$2,108	$3,406	$43	$76

1. Preliminary Data.
2. Graduate Center, 4-Year Colleges, and a portion of Central Administration, and NYC Technical College.
3. Includes debt service.
4. Includes a portion of Central Administration.
5. Numbers may not add due to rounding.

NOTE: This table corresponds to Table 34 in the body of this Statewide Plan.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 4

SELECTED REVENUE AND EXPENDITURE DATA*
SUNY STATE-OPERATED CAMPUSES

	1978-79	1979-80	1980-81	1981-82	1982-83
COST PER FTE STUDENT:					
Educational and General	4,422	4,824	4,769	5,343	6,018
Instructional	2,659	2,880	2,907	3,254	3,640
Non-Instructional	1,763	1,944	1,862	2,089	2,378
TUITION AND FEES:					
Revenues per FTE Student	980	1,033	1,163	1,251	1,287
Avg. Full-time Undergrad. Rate	904	1,030	1,072	1,220	1,251
TUITION AND FEE REV. AS A PCT OF:					
Educational and General Cost	22.2%	21.4%	24.4%	23.4%	21.4%
Instructional Cost	36.9%	35.9%	40.0%	38.4%	35.4%
TAP AS A PERCENT OF TUITION AND FEES REVENUES:	20.4%	21.1%	17.7%	19.6%	18.5%
STANDARD COST INDICES					
Higher Education Price Index	168.7	185.3	205.2	225.8	240.1
Consumer Price Index	172.4	195.4	218.0	236.9	247.1
ENROLLMENT:					
Full-Time Equivalent Students	158,300	160,500	166,100	166,300	164,600

*See Fiscal Glossary in the body of this Statewide Plan for explanation of definitions and methods.

NOTE: This table corresponds to Table 35 in the body of this Statewide Plan.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 5

SELECTED REVENUE AND EXPENDITURE DATA*
CUNY SENIOR COLLEGES

	1978-79	1979-80	1980-81	1981-82	1982-83
COST PER FTE STUDENT:					
Educational and General	3,355	3,553	4,325	5,428	5,833
Instructional	2,326	2,277	2,734	3,399	3,571
Non-Instructional	1,029	1,276	1,591	2,029	2,262
TUITION AND FEES:					
Revenues per FTE Student	1,028	1,106	1,158	1,194	1,360
Avg. Full-time Undergrad. Rate	907	972	973	967	1,146
TUITION AND FEE REV. AS A PCT OF:					
Educational and General Cost	30.6%	31.1%	26.8%	22.0%	23.3%
Instructional Cost	44.2%	48.6%	42.4%	35.1%	38.1%
TAP AS A PERCENT OF TUITION AND FEES REVENUES:	30.2%	29.0%	29.5%	27.1%	26.0%
STANDARD COST INDICES					
Higher Education Price Index	168.7	185.3	205.2	225.8	240.1
Consumer Price Index	172.4	195.4	218.0	236.9	247.1
ENROLLMENT:					
Full-Time Equivalent Students	100,000	98,100	93,800	92,600	91,800

*See Fiscal Glossary in the body of this Statewide Plan for explanation of definitions and methods.

NOTE: This table corresponds to Table 36 in the body of this Statewide Plan.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 6

SELECTED REVENUE AND EXPENDITURE DATA*
COMMUNITY COLLEGES

	1978-79	1979-80	1980-81	1981-82	1982-83
COST PER FTE STUDENT:					
Educational and General	2,700	2,888	3,127	3,505	3,693
Instructional	1,463	1,525	1,644	1,893	1,969
Non-Instructional	1,237	1,363	1,483	1,612	1,724
TUITION AND FEES:					
Revenues per FTE Student	803	888	937	998	1,135
Avg. Full-time Undergrad. Rate	758	861	894	933	1,024
TUITION AND FEE REV. AS A PCT OF:					
Educational and General Cost	29.7%	30.7%	30.0%	28.5%	30.7%
Instructional Cost	54.9%	58.2%	57.0%	52.7%	57.6%
TAP AS A PERCENT OF TUITION AND FEES REVENUES:	32.3%	33.0%	27.3%	26.6%	25.3%
STANDARD COST INDICES					
Higher Education Price Index	168.7	185.3	205.2	225.8	240.1
Consumer Price Index	172.4	195.4	218.0	236.9	247.1
ENROLLMENT:					
Full-Time Equivalent Students	146,000	149,700	153,900	159,000	161,800

*See Fiscal Glossary in the body of this Statewide Plan for explanation of definitions and methods.

NOTE: This table corresponds to Table 37 in the body of this Statewide Plan.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 7

SELECTED REVENUE AND EXPENDITURE DATA*
CUNY COMMUNITY COLLEGES

	1978-79	1979-80	1980-81	1981-82	1982-83
COST PER FTE STUDENT:					
Educational and General	2,820	3,128	3,807	4,629	4,733
Instructional	1,632	1,663	1,978	2,545	2,576
Non-Instructional	1,188	1,465	1,829	2,084	2,157
TUITION AND FEES:					
Revenues per FTE Student	829	966	1,054	1,113	1,323
Avg. Full-time Undergrad. Rate	775	952	956	954	1,118
TUITION AND FEE REV. AS A PCT OF:					
Educational and General Cost	29.4%	30.9%	27.7%	24.0%	28.0%
Instructional Cost	50.8%	58.1%	53.3%	43.7%	51.4%
TAP AS A PERCENT OF TUITION AND FEES REVENUES:	65.5%	66.0%	47.7%	44.0%	42.2%
STANDARD COST INDICES					
Higher Education Price Index	168.7	185.3	205.2	225.8	240.1
Consumer Price Index	172.4	195.4	218.0	236.9	247.1
ENROLLMENT:					
Full-Time Equivalent Students	38,900	39,100	36,200	36,700	38,200

*See Fiscal Glossary in the body of this Statewide Plan for explanation of definitions and methods.

NOTE: This table corresponds, in part, to Table 37 in the body of this Statewide Plan.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 8

SELECTED REVENUE AND EXPENDITURE DATA*
SUNY COMMUNITY COLLEGES

	1978-79	1979-80	1980-81	1981-82	1982-83
COST PER FTE STUDENT:					
Educational and General	2,656	2,802	2,917	3,167	3,371
Instructional	1,403	1,476	1,542	1,698	1,782
Non-Instructional	1,253	1,326	1,375	1,469	1,589
TUITION AND FEES:					
Revenues per FTE Student	793	861	901	963	1,076
Avg. Full-time Undergrad. Rate	751	823	873	927	933
TUITION AND FEE REV. AS A PCT OF:					
Educational and General Cost	29.9%	30.7%	30.9%	30.4%	31.9%
Instructional Cost	56.5%	58.3%	58.4%	56.7%	60.4%
TAP AS A PERCENT OF TUITION AND FEES REVENUES:	19.8%	20.0%	20.0%	20.5%	18.9%
STANDARD COST INDICES					
Higher Education Price Index	168.7	185.3	205.2	225.8	240.1
Consumer Price Index	172.4	195.4	218.0	236.9	247.1
ENROLLMENT:					
Full-Time Equivalent Students	107,100	110,600	117,600	122,300	123,600

*See Fiscal Glossary in the body of this Statewide Plan for explanation of definitions and methods.

NOTE: This table corresponds, in part, to Table 37 in the body of this Statewide Plan.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 9

SELECTED REVENUE AND EXPENDITURE DATA*
INDEPENDENT SECTOR

	1978-79	1979-80	1980-81	1981-82	1982-83
COST PER FTE STUDENT:					
Educational and General	4,698	5,150	5,694	6,369	6,724
Instructional	2,704	2,939	3,192	3,572	3,914
Non-Instructional	1,994	2,211	2,502	2,797	2,810
TUITION AND FEES:					
Revenues per FTE Student	3,678	4,025	4,444	5,028	5,664
Avg. Full-time Undergrad. Rate	3,405	3,690	4,061	4,571	5,195
TUITION AND FEE REV. AS A PCT OF:					
Educational and General Cost	78.3%	78.2%	78.0%	79.0%	84.2%
Instructional Cost	136.0%	137.0%	139.2%	140.8%	144.7%
TAP AS A PERCENT OF TUITION AND FEES REVENUES:	9.5%	9.3%	8.4%	7.7%	7.1%
STANDARD COST INDICES					
Higher Education Price Index	168.7	185.3	205.2	225.8	240.1
Consumer Price Index	172.4	195.4	218.0	236.9	247.1
ENROLLMENT:					
Full-Time Equivalent Students	300,100	307,600	317,200	322,300	318,900

*See Fiscal Glossary in the body of this Statewide Plan for explanation of definitions and methods.

NOTE: This table corresponds to Table 38 in the body of this Statewide Plan.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 10

SELECTED REVENUE AND EXPENDITURE DATA*
DEGREE-GRANTING PROPRIETARY INSTITUTIONS

	1978-79	1979-80	1980-81	1981-81	1982-83
COST PER FTE STUDENT:					
Educational and General	2,043	2,170	2,421	2,598	2,820
Instructional	741	730	851	849	892
Non-Instructional	1,302	1,440	1,570	1,749	1,928
TUITION AND FEES:					
Revenues per FTE Student	2,256	2,362	2,620	2,926	3,065
Avg. Full-time Undergrad. Rate	2,342	2,521	2,821	3,163	3,470
TUITION AND FEE REV. AS A PCT OF:					
Educational and General Cost	110.4%	108.8%	108.2%	112.6%	108.7%
Instructional Cost	304.5%	323.6%	307.9%	344.7%	344.4%
TAP AS A PERCENT OF TUITION AND FEES REVENUES:	**	**	**	**	**
STANDARD COST INDICES					
Higher Education Price Index	168.7	185.3	205.2	225.8	240.1
Consumer Price Index	172.4	195.4	218.0	236.9	247.1
ENROLLMENT:					
Full-Time Equivalent Students	17,300	18,200	19,300	21,200	22,800

*See Fiscal Glossary in the body of this Statewide Plan for explanation of definitions and methods.
**Data not readily available.

NOTE: This table corresponds to Table 39 in the body of this Statewide Plan.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 11

NONRESIDENTIAL FACILITIES ON PRIMARY CAMPUSES (TO THE NEAREST THOUSAND NASF): 1979 AND 1982

Type of Institution	Classrooms		Laboratories		Offices		Libraries		Academic Facilities[1]		Other Nonresidential		Total		% Chg. in Total
	1979	1982	1979	1982	1979	1982	1979	1982	1979	1982	1979	1982	1979	1982	
New York State Total	9,350	9,357	16,650	16,651	16,970	17,875	8,391	8,927	51,361	52,810	31,591	31,835	82,952	84,645	2.0
State University State-Operated	1,732	1,795	5,208	5,191	4,897	5,056	2,396	2,413	14,233	14,455	9,362	9,416	23,595	23,871	1.2
Community Colleges	1,160	1,132	1,824	1,802	1,287	1,296	786	781	5,057	5,011	2,936	2,848	7,993	7,859	-1.7
The City University Senior Colleges	922	888	1,710	1,710	1,916	2,195	603	719	5,151	5,512	1,903	1,877	7,054	7,389	4.7
Community Colleges	370	374	429	451	638	703	186	195	1,643	1,723	666	657	2,309	2,380	3.1
Independent Institutions	4,871	4,871	7,303	7,313	7,999	8,273	4,350	4,748	24,523	25,205	16,408	16,836	4[illegible],931	42,041	2.7
Degree-Granting Proprietary Insts.	285	285	153	164	104	121	20	19	362	389	145	147	707	736	4.1

[1] Academic Facilities include classrooms, laboratories, offices, and libraries.

NOTE: Columns do not add to "New York Total" because Central Administration facilities of CUNY & SUNY are not apportioned by level.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 12

NONRESIDENTIAL FACILITIES PER FTED AT PRIMARY CAMPUSES: 1979 AND 1982

Type of Institution	Classrooms 1979	Classrooms 1982	Laboratories 1979	Laboratories 1982	Offices 1979	Offices 1982	Libraries 1979	Libraries 1982	Academic Facilities[1] 1979	Academic Facilities[1] 1982	Other Nonresidential 1979	Other Nonresidential 1982	Total 1979	Total 1982	% Chg. in Total
New York State Total	15.9	16.0	28.4	28.6	28.4	30.2	14.2	15.3	86.9	90.1	53.3	54.2	140.2	144.3	2.9
State University State-Operated	12.1	12.8	36.5	37.1	32.6	34.5	16.8	17.4	97.9	101.9	64.5	66.6	162.4	168.5	3.7
Community Colleges	12.6	11.6	19.8	18.5	13.9	13.3	8.5	8.0	54.8	51.5	31.8	29.3	86.6	80.8	-6.8
City University Senior Colleges	11.7	12.7	21.7	24.4	24.3	31.3	7.7	10.2	65.4	78.5	24.2	26.7	89.6	105.3	17.5
Community Colleges	12.1	11.9	14.0	14.3	21.5	22.4	6.1	6.2	53.8	54.8	21.8	20.9	75.6	75.7	.1
Independent Institutions	21.8	21.9	32.8	33.0	35.6	37.2	19.3	21.2	109.5	113.3	73.0	75.4	182.5	188.7	3.4
Degree-Granting Proprietary Insts.	16.1	14.8	8.7	8.5	5.9	6.3	1.2	1.0	31.9	30.5	8.2	7.6	40.0	38.2	4.7

[1] Academic Facilities include classrooms, laboratories, offices, and libraries.

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Table 13

CHANGE IN FTES[1] AND FTEDS[2] ENROLLMENT: 1979 TO 1982 (IN THOUSANDS)

	FTES % Change 1979-1982	FTEDS % Change 1979-1982
New York State Total	3.7%	1.4%
SUNY		
State-Operated	2.3	-2.1
Community Colleges	11.7	12.1
CUNY		
Senior Colleges	-6.8	-10.1
Community Colleges	-2.3	3.0
Independent Institutions	4.4	1.4
Degree-Granting Proprietary Institutions	23.5	21.4

[1] FTES: Full-Time Equivalent Students.

[2] FTEDS: Full-Time Equivalent Day Students

Source: NYSED, Bureau of Postsecondary Finance and Facilities Studies, 1984.

Appendix F

MASTER PLAN AMENDMENTS APPROVED BY THE REGENTS

November 1, 1982, through October 31, 1984

THE CITY UNIVERSITY OF NEW YORK

The City University of New York (9/21/84)

Authorized the City University Board of Trustees to confer the degree of Doctor of Medicine (M.D.), such amendment to be effective only until September 30, 1986, unless the program in medicine leading to the M.D. degree is registered by the Department prior to that date, in which case master plan amendment shall be without term.

Awaiting action by the Governor.

Baruch College (9/23/83)

Authorized City University to acquire and alter facilities for Baruch College.

Approved by the Governor on 10/20/83.

City University School of Law at Queens College (4/22/83)

Authorized City University to alter facilities for the City University School of Law at Queens College, with the condition that the University aggressively seek to identify possible areas of excess space in the plans for the Law School at Queens College.

Approved by the Governor without condition on 6/1/83.

City College (2/24/84)

Authorized City University to establish a program in management and administration leading to the degree of Bachelor of Arts (B.A.) at City College.

Approved by the Governor on 7/3/84.

Hunter College (10/21/83)

Authorized the City University Board of Trustees to confer the degree of Master of Public Health (M.P.H.) on duly qualified students completing registered programs at Hunter College and to establish a program in community health education leading to the degree of Master of Public Health (M.P.H.) at Hunter College.

Approved by the Governor on 8/1/84.

York College (7/25/84)

Authorized City University to establish a program in nursing (upper-division) leading to the degree of Bachelor of Science (B.S.) at York College.

Approved by the Governor on 8/21/84.

Bronx Community College (7/29/83)

Authorized City University to establish a program in ornamental horticulture leading to the degree of Associate in Applied Science (A.A.S.) at Bronx Community College.

Approved by the Governor on 8/26/83.

Hostos Community College (9/23/83)

Authorized the City University facilities space program for Hostos Community College.

Approved by the Governor on 11/7/83.

LaGuardia Community College (4/22/83)

Authorized City University to acquire an annex facility for LaGuardia Community College.

Approved by the Governor on 7/11/83.

LaGuardia Community College (2/24/84)

Authorized City University to establish a program in nursing leading to the degree of Associate in Applied Science (A.A.S.) at LaGuardia Community College.

Approved by the Governor on 7/2/84.

LaGuardia Community College (10/23/84)

Authorized City University to establish a program in physical therapist assistant leading to the degree of Associate in Applied Science (A.A.S.) at LaGuardia Community College.

Awaiting action by the Governor.

New York City Technical College (5/20/83)

Authorized the City University Board of Trustees to confer the degree of Bachelor of Technology (B. Tech.)

on duly qualified students completing registered programs at New York City Technical College and to establish a program in hotel and restaurant management leading to the degree of Bachelor of Technology (B. Tech.) at New York City Technical College.

Approved by the Governor on 6/28/83.

INDEPENDENT INSTITUTIONS

Adelphi University (9/23/83)

Authorized Adelphi University to establish a program in mathematics leading to the degree of Doctor of Arts (D.A.).

Catholic Medical Center of Brooklyn and Queens School of Nursing (2/25/83)

Authorized Catholic Medical Center of Brooklyn and Queens School of Nursing to confer the degree of Associate in Applied Science (A.A.S.) on duly qualified students completing registered programs and to establish a program in nursing leading to the degree of Associate in Applied Science (A.A.S.).

The College for Human Services (7/29/83)

Authorized The College for Human Services to establish a program in business leading to the degree of Bachelor of Professional Studies (B.P.S.).

College of Mount Saint Vincent (2/25/83)

Authorized the College of Mount Saint Vincent to establish a program in business leading to the degree of Bachelor of Arts (B.A.).

The College of Saint Rose (1/17/84)

Authorized The College of Saint·Rose to establish a program in communication disorders leading to the degree of Master of Science in Education (M.S. in Ed.).

The College of Saint Rose (10/23/84)

Authorized The College of Saint Rose to confer the degree of Master of Business Administration (M.B.A.) on duly qualified students completing registered programs and to establish a program in business administration leading to the degree of Master of Business Administration (M.B.A.).

Dominican College (12/16/83)

Authorized Dominican College to establish a program in occupational therapy leading to the degree of Bachelor of Science (B.S.).

Interfaith Medical Center School of Nursing (3/23/84)

Authorized Interfaith Medical Center School of Nursing to confer the degree of Associate in Applied Science (A.A.S.) on duly qualified students completing registered programs and to establish a program in nursing leading to the degree of Associate in Applied Science (A.A.S.).

Iona College (4/22/83)

Authorized Iona College to confer the degree of Master of Arts (M.A.) on duly qualified students completing registered programs at its main campus in New Rochelle and its branch campus in Orangeburg and to establish a program in English leading to the degree of Master of Arts (M.A.) at New Rochelle and Orangeburg.

Keuka College (10/23/84)

Authorized Keuka College to establish a program in occupational therapy leading to the degree of Bachelor of Science (B.S.).

Long Island University (4/22/83)

Authorized Long Island University to establish a program in school administration/school district administration leading to an advanced certificate at the Brooklyn Center.

Long Island University (12/16/83)

Authorized Long Island University to establish a program in computer science leading to the degree of Bachelor of Professional Studies (B.P.S.) at the Suffolk branch campus of C.W. Post College.

Long Island University (10/23/84)

Authorized Long Island University to confer the degree of Bachelor of Fine Arts (B.F.A.) on duly qualified students completing registered programs at Southampton College and to establish a program in arts management leading to the degree of Bachelor of Fine Arts (B.F.A.) at Southampton College.

Manhattan School of Music (9/23/83)

Authorized Manhattan School of Music to establish a program in harpsichord leading to the degree of Doctor of Musical Arts (D.M.A.).

Marist College (5/25/84)

Authorized Marist College to establish a program in nursing leading to the degree of Bachelor of Science (B.S.).

Marymount Manhattan College (10/23/84)

Authorized Marymount Manhattan College to establish a program in communication arts leading to the degree of Bachelor of Arts (B.A.).

Mater Dei College (3/23/84)

Authorized Mater Dei College to establish a program in secretarial studies leading to the degree of Associate in Applied Science (A.A.S.).

Mercy College (10/23/84)

Authorized Mercy College to confer the degree of Bachelor of Fine Arts (B.F.A.) on duly qualified students completing registered programs at its main campus in Dobbs Ferry, and at its branch campus in Yorktown Heights and to establish a program in graphic design leading to the degree of Bachelor of Fine Arts (B.F.A.) at Dobbs Ferry and Yorktown Heights.

Mount Saint Mary College (11/18/83)

Authorized Mount Saint Mary College to establish a program in Hispanic studies leading to the degree of Bachelor of Arts (B.A.).

Mount Saint Mary College (1/17/84)

Authorized Mount Saint Mary College to confer the degree of Master of Science in Education (M.S. in Ed.) on duly qualified students completing registered programs and to establish a program in special education leading to the degree of Master of Science in Education (M.S. in Ed.).

New School for Social Research (10/23/84)

Authorized the New School for Social Research to confer the degree of Bachelor of Business Administration (B.B.A.) on duly qualified students completing registered programs and to establish a program in retail merchandising, marketing, and product design leading to the degree of Bachelor of Business Administration (B.B.A.).

New York Institute of Technology (1/18/83)

Authorized New York Institute of Technology to establish a program in clinical nutrition leading to the degree of Master of Science (M.S.) at its main campus in Old Westbury.

New York Institute of Technology (12/16/83)

Authorized New York Institute of Technology to establish a branch campus in Central Islip, Suffolk County, and to offer at that location programs in architectural technology, behavioral sciences, business administration, computer science, and general studies, all leading to the degree of Bachelor of Science (B.S.); programs in general studies and hotel and restaurant administration leading to the degree of Bachelor of Professional Studies (B.P.S.); programs in electromechanical technology, mechanical technology-manufacturing technology, and mechanical technology-plant operation technology leading to the degree of Bachelor of Technology (B. Tech.); a program in management leading to the degree of Master of Business Administration (M.B.A.); a program in human relations leading to the degree of Master of Professional Studies (M.P.S.); and programs in computer science and labor and industrial relations, each leading to the degree of Master of Science (M.S.).

New York Medical College (12/16/83)

Authorized New York Medical College to establish a program in health psychology leading to the degree of Master of Science (M.S.).

New York Medical College (10/23/84)

Authorized New York Medical College to establish a program in gerontology leading to the degree of Master of Public Health (M.P.H.).

New York University (10/21/83)

Authorized New York University to establish an interinstitutional program at the campus of Dominican College of Blauvelt, to confer the degree of Master of Social Work (M.S.W.) on duly qualified students completing registered programs at that location, and to establish there a program in social work leading to the degree of Master of Social Work (M.S.W.).

New York University (10/23/84)

Authorized New York University to confer the degree of Bachelor of Music (Mus.B.) on duly qualified students completing registered programs and to establish programs in theory and composition, voice, piano, and instrumental leading to the degree of Bachelor of Music (Mus.B.).

Pace University (10/23/84)

Authorized Pace University to establish a program in early childhood development leading to the degree of Associate in Science (A.S.) at its White Plains campus.

Parsons School of Design (4/22/83)

Authorized Parsons School of Design to establish a program in art teacher education leading to the degree of Bachelor of Fine Arts (B.F.A.).

Polytechnic Institute of New York (3/23/84)

Authorized Polytechnic Institute of New York to establish a program in journalism and technical writing leading to the degree of Bachelor of Science (B.S.) at its main campus in Brooklyn.

Polytechnic Institute of New York (10/23/84)

Authorized Polytechnic Institute of New York to establish a program in mathematics leading to the degree of Bachelor of Science (B.S.) at its Long Island Center in Farmingdale.

Roberts Wesleyan College (10/23/84)

Authorized Roberts Wesleyan College to establish a program in communications leading to the degree of Bachelor of Arts (B.A.).

Rochester Institute of Technology (10/23/84)

Authorized Rochester Institute of Technology to establish a program in economics leading to the degree of Bachelor of Science (B.S.).

Saint John Fisher College (2/25/83)

Authorized Saint John Fisher College to confer the degree of Master of Business Administration (M.B.A.) on duly qualified students and to establish programs in management (action analysis) and management (action analysis with a specialization) leading to the degree of Master of Business Administration (M.B.A.).

Saint John's University (12/16/83)

Authorized Saint John's University to establish a program in funeral service administration leading to the degree of Bachelor of Science (B.S.)

Saint John's University (10/23/84)

Authorized Saint John's University to establish a program in speech pathology and audiology leading to the degree of Master of Arts (M.A.).

Saint Joseph's Seminary and College (10/23/84)

Authorized Saint Joseph's Seminary and College to establish a program in religious studies leading to the degree of Master of Arts (M.A.).

Siena College (11/18/83)

Authorized Siena College to establish a program in social work leading to the degree of Bachelor of Arts (B.A.).

Touro College (1/17/84)

Authorized Touro College to establish a program in health sciences/physical therapy leading to the degrees of Bachelor of Science/Master of Arts (B.S./M.A.).

Touro College (9/21/84)

Authorized Touro College to establish a branch campus at Huntington, Suffolk County, and to offer at the branch campus a program in law leading to the degree of Doctor of Law (J.D.).

Wendell Castle Workshop (5/20/83)

Authorized Wendell Castle Workshop to confer the degree of Associate in Occupational Studies (A.O.S.) and to establish a program in woodworking and furniture design leading to the degree of Associate in Occupational Studies (A.O.S.).

STATE UNIVERSITY OF NEW YORK

SUNY Albany (7/29/83)

Authorized State University to establish a program in social welfare leading to the degree of Doctor of Philosophy (Ph.D.) at the State University of New York at Albany.

Approved by the Governor on 11/16/83.

SUNY Albany (7/25/84)

Authorized State University to establish a program in humanistic studies leading to the degree of Doctor of Arts (D.A.) at the State University of New York at Albany.

Approved by the Governor on 8/20/84.

SUNY Binghamton (5/25/84)

Authorized the State University Trustees to confer the degree of Bachelor of Fine Arts (B.F.A.) on duly qualified students completing registered programs at the State University of New York at Binghamton and to establish a program in studio art leading to the degree of Bachelor of Fine Arts (B.F.A.) at the State University of New York at Binghamton.

Approved by the Governor on 7/19/84.

SUNY Buffalo (12/17/82)

Authorized the State University Trustees to confer the degree of Master of Music (M.M.) on duly qualified students completing registered programs at the State University of New York at Buffalo and to establish a program in music education leading to the degree of Master of Music (M.M.) at the State University of New York at Buffalo.

Approved by the Governor on 3/2/84.

SUNY Buffalo (10/21/83)

Authorized the State University Trustees to confer the degree of Master of Engineering (M.E.) on duly qualified students completing registered programs at the State University of New York at Buffalo and to establish programs in aerospace engineering, chemical engineering, civil engineering, electrical engineering, mechanical engineering, and industrial engineering leading to the degree of Master of Engineering (M.E.) at the State University of New York at Buffalo.

Approved by the Governor on 3/21/84.

SUNY Stony Brook (6/17/83)

Authorized the State University Trustees to confer the degree of Master of Fine Arts (M.F.A.) on duly qualified students completing registered programs at the State University of New York at Stony Brook and to establish a program in dramaturgy leading to the degree of Master of Fine Arts (M.F.A.) at the State University of New York at Stony Brook.

Approved by the Governor on 11/10/83.

SUNY Upstate Medical Center (6/17/83)

Authorized State University to establish an upper-division program in nursing leading to the degree of Bachelor of Science/Master of Science (B.S./M.S.) at the State University of New York Upstate Medical Center.

Approved by the Governor on 1/20/84.

SUC New Paltz (6/17/83)

Authorized the State University Trustees to confer the degree of Master of Science (M.S.) on duly qualified students completing registered programs at the State University College at New Paltz and to establish a program in computer science leading to the degree of Master of Science (M.S.) at the State University College at New Paltz.

Approved by the Governor on 7/12/83.

SUC Oneonta (10/23/84)

Authorized State University to establish a program in business economics leading to the degree of Bachelor of Science (B.S.) at the State University College at Oneonta.

Awaiting action by the Governor.

SUC Potsdam (1/18/83)

Authorized State University to establish a program in industrial and labor relations leading to the degree of Bachelor of Arts (B.A.) at the State University College at Potsdam.

Approved by the Governor on 3/4/83.

SUC Purchase (2/25/83)

Authorized the State University Trustees to confer the degree of Master of Fine Arts (M.F.A.) on duly qualified students completing registered programs at the State University College at Purchase and to establish programs in theater design and theater technology leading to the degree of Master of Fine Arts (M.F.A.) at the State University College at Purchase.

Approved by the Governor on 7/12/83.

SUNY College of Technology at Utica/Rome (4/23/84)

Authorized the State University Trustees to confer the degree of Master of Science (M.S.) on duly qualified students completing registered programs at the State University of New York College of Technology at Utica/Rome and to establish a program in computer and information science leading to the degree of Master of Science (M.S.) at the State University of New York College of Technology at Utica/Rome.

Approved by the Governor on 6/22/84.

SUNY Agricultural and Technical College at Delhi (2/25/83)

Authorized State University to establish a program in nursing leading to the degree of Associate in Applied Science (A.A.S.) at the State University of New York Agricultural and Technical College at Delhi.

Approved by the Governor on 5/17/83.

Erie Community College (1/18/83)

Authorized State University to establish a program in manufacturing technology-robotics automation leading to the degree of Associate in Applied Science (A.A.S.) at the City Campus of Erie Community College.

Approved by the Governor on 2/22/83.

North Country Community College (7/25/84)

Authorized State University to establish a program in nursing leading to the degree of Associate in Applied Science (A.A.S.) at the main campus of North Country Community College at Saranac Lake and its branch campus at Malone.

Approved by the Governor on 8/9/84.